Motivational and Enabling Factors of Environmental Engagement in the SMEs of Developing Economies: Perceptions From the Leather Industry in Pakistan

Thesis

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Motivational and Enabling Factors of Environmental Engagement in the SMEs of Developing Economies: Perceptions from the Leather Industry in Pakistan

DISSERTATION

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Dedicated to my Parents

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Abstract

Globally small and medium-sized enterprises (SMEs) are under constant pressure of different stakeholders to adopt environmentally responsible business practices. It has also inspired researchers, who have identified different internal and external drivers of and barriers to environmental engagement of SMEs. Crucially, the research on factors that might enable the environmental practices of SMEs is limited indeed. At the same time, much of the prior literature represents the context of developed economies. Consequently, little is known about the environmental practices of SMEs in developing economies. This qualitative study research has tried to address this gap in literature by exploring the influence of human capital- as an enabling factor- on environmental engagement of SMEs in the leather industry in Pakistan, which is a developing economy. Also the motivations for adopting environmental practices are explored. The thematic analysis of 8 Skype-based interviews has revealed that SMEs in the leather industry develop links with environmentally responsible suppliers to get environment friendly inputs, get environmental certifications and adopt different resource saving and pollution prevention measures to reduce their environmental impacts. Considerably, contrary to the earlier studies that often regard compliance with regulation as a primary motivation for SMEs to adopt environmental practices in developed economies, this research has identified that for the SMEs in leather industry in Pakistan the pressure from customers (mainly international buyers) is the leading motivation for environmental engagement. This study also asserts that human capital does enable the environmental practices of SMEs but it is hard to explain its exact impact. Significantly, this study highlights that often the investment in environmental initiatives is pre-dominantly informed by the economic rationale and willingness of owner-mangers to invest in such measures and less by the academic qualification and environmental-awareness of owner-managers and the sustainability rationale.

Chapter 1: Aims and Objectives

1.1 Introduction

This chapter outlines the aims and objectives of this study. It is argued that there is a need to explore the factors that influence the ability of small and medium-sized enterprises (hereinafter referred to as SMEs) to adopt environmental practices in developing economies, such as Pakistan.

1.2 The Context of Research

One of the major challenges of the twenty-first century is environmental degradation. Especially, the last two decades have witnessed a considerable increase in environmental concerns and consciousness of different stakeholders across the globe. Among many others, private sector enterprises are widely recognised to have a considerable impact on the natural environment (Gadenne et al., 2009). In response to the rising environmental damage caused by the firms; consumers and other supply chain actors are putting pressure on some companies to take measures to protect the environment (Liu et al., 2012; Gold et al., 2010; Ciliberti et al., 2008). Also, governments around the globe have started to take this issue more seriously. Subsequently, different policy interventions are introduced to mitigate the environmental impacts of businesses (Blundel et al., 2013). However, this is happening to varying degrees and is often constrained by lack of resources and/or other political priorities. Moreover, not surprisingly, these interventions have mostly been steered towards large size firms (Blundel et al., 2013; Brammer et al., 2012; Parker et al., 2009). One of the major reasons for inclination of policy interventions towards large size enterprises may be the inability of SMEs to adopt environmental practices, mainly due to resource scarcity (Tilley, 2000). At the same time, some companies are themselves taking actions to adopt environmental practices due to pressures from governments and/or customers or in pursuit of their own corporate social responsibility agendas (Revell et al.,

2010). Nevertheless, given the considerable presence of SMEs in the economies worldwide, the environmental engagement of SMEs alongside large size firms is imperative to protect the environment (Williams and Schaefer, 2012; Battisti and Perry, 2011; Gadenne et al., 2009). Consequently, as is also argued by Williams and Schaefer (2012) and Hofmann et al. (2012), the understanding about the motivations and enablers of environmental engagement of SMEs is essential.

SMEs can be considered as micro-engines of macroeconomic growth. Not only their socio-economic and technological contribution is significant, the aggregate impact of SMEs on environment is also considered to be huge (Gadenne et al., 2009; Williamson et al., 2006). In addition to that, just like their heterogeneous attributes across nations, cultures and sectors, the environmental impacts and practices of SMEs are also identified to be diverse (Brammer et al., 2012; Hamann et al., 2009). In the UK, for example, about 99% of the businesses are SMEs and they engage about 60% of the private sector workforce[1]. At the same time, their contribution to commercial wastes is estimated to be 60% (Blundel et al., 2013). Likewise, in European region 64% of the environmental impacts are estimated to be caused by SMEs (Calogirou et al., 2010). While the quantified environmental impact of SMEs can be traced for some developed countries, it is largely unmeasured in the context of emerging economies. Nevertheless, the environmental issues of SMEs in developing economies are also significant. In Pakistan, for example, SMEs constitute 99% of the industrial landscape of the country with a contribution of about 40% to GDP and 30% to total export earnings[2]. The environmental issues attached with these SMEs include; air and water pollution, energy intensive production processes, high wastage of raw materials, use of toxic chemicals causing health problems to employees, high volumes of solid wastes etc. While it is important to realise that SMEs in developed and developing economies

[1] http://webarchive.nationalarchives.gov.uk/20081112132956/berr.gov.uk/whatwedo/enterprise/enterprisesmes/index.html

[2] http://www.finance.gov.pk/survey/chapter_12/03-Manufacturing.pdf

have significant environmental impacts, it is even more crucial to explore what might enable SMEs to adopt pro-environmental behaviour.

1.3 The Rationale for Research

In the past, environmental engagement of large size firms has been the main focus of researchers. According to Tilley (2000), it may be because SMEs were considered to be 'less worthy, less needy or less relevant research subject compared to large firms' (p.33). Nevertheless, most recently, researchers have developed interest in understanding the environmental practices of SMEs (e.g. Blundel et al., 2013; Williams and Schaefer, 2012; Hofmann et al., 2012; Parker et al., 2009). Yet, much of this research is focused on developed economies. Consequently, little is known about the environmental engagement of SMEs of developing countries, which are unique in their own context. Generally, SMEs in developing economies are considered to have an important role in addressing problems like unemployment, poverty and low growth. However, their potential to make a substantial contribution to economic growth has been identified to be constrained by the scarcity of resources[3]. These resources may include financial assets, technological competencies, knowledge and skill level of owner-managers and employees, networking with firms and infrastructural facilities. Given the uniqueness of SMEs of developing economies, it would therefore be valuable to investigate how these SMEs are coping with environmental challenges. In addition to that, hitherto researchers have identified a number of internal and external drivers of and barriers to environmental practices of SMEs (e.g. Williams and Schaefer, 2012; Brammer et al., 2012; Vickers et al., 2009). The research that looks specifically at the internal processes, capabilities and resources that enable SMEs to engage effectively with environmental issues is very limited indeed. Consequently, the identified gap in literature calls for developing economy focused research. At the same time, it would also be valuable to explore the factors that might

[3] http://www.ceauk.org.uk/2010-conference-papers/full-papers/Iftikhar-Hussain-CEA-final.pdf

influence the ability of SMEs to pursue environmental practices. Hofmann et al. (2012) also support such a call for research by emphasizing that more research is needed to identify firms' capabilities as drivers of environmental practices.

Pakistan, being a developing economy and the uniqueness of its SMEs operating in the leather industry in terms of, for example, resources, capabilities, business opportunities, entrepreneurial mind-set, culture, and traditions, gives an opportunity to fill the identified gaps in the literature. Some important reasons for proposing a research on Pakistan's leather industry include; firstly, after textile and rice, leather products are the third largest contributor to the export earnings of the country (Table 1.1). Therefore, the leather industry carries great economic importance for the country, especially in terms of foreign exchange earnings. Secondly, destination-wise the leather exports from Pakistan are largely concentrated in European markets (Appendix-1A). The European buyers are much environmentally conscious. They expect their suppliers to be environmentally responsible. Thus the environmental requirements of the European buyers have implications for firms operating in the leather industry. Thirdly, the environmental issues attached with the leather industry are recognized to be significant. The major environmental challenges include wastewater discharge, solid waste disposal and air emissions[4]. Finally, the leather sector in Pakistan has recently been of considerable attention to the local authorities and international interventions for curtailing its environmental impacts[5]. All these factors can be considered as a sound rationale for researching the environmental practices of SMEs in the leather industry in Pakistan.

A brief discussion on the emergence and geographical spread of leather industry in Pakistan is attached as Appendix-1B.

[4] http://www.environmental-expert.com/Files/0/articles/2226/2045.pdf

[5] http://www.lead.org.pk/attachments/mtd/mtd50/attachments/fellow_case_study.pdf

Table 1.1

Major Exports from Pakistan (Percentage Share)

Commodity	06-07	07-08	08-09	09-10	10-11	Jul-Mar*	
						10-11	11-12
Cotton Manufacturers	59.7	51.9	52.6	50.6	52.9	53.7	50.1
Leather **	5.2	5.8	5.4	4.5	4.4	4.5	2.2
Rice	6.6	9.8	11.2	11.3	8.7	9.0	8.7
Sub-Total of three Items	**71.5**	**67.5**	**69.2**	**66.4**	**66**	**67.2**	**61.0**
Other Items	28.5	32.5	30.8	33.6	34.0	32.8	39.0
Total	100	100	100	100	100	100	100
* Provisional, ** Leather & Leather Manufactured							

(Source: Economic Survey of Pakistan 2012-13, p.118)

1.4 Aims and Objectives of this Research

This research aims to explore and describe the motivational and enabling factors of environmental practices of SMEs, especially in the context of emerging economies such as Pakistan. The objectives are to explore

1. how environmental issues are understood by the owner-managers of SMEs in leather industry in Sialkot and Sheikhupura districts of Punjab province in Pakistan,
2. the measures taken to reduce the environmental impacts of the SMEs,
3. the processes, resources, and capabilities that enable the environmental engagement of the SMEs, and
4. specifically, the role of human capital[6] in enabling the SMEs to adopt environmental practices.

1.5 The Research Questions

To achieve the aims and objectives of this research, the following research questions are proposed.

[6] For this research, human capital is taken as the knowledge, skills and experiences of individuals (owner-managers and employees), both general and environment related (Dakhli, and Clercq, 2004; Davidsson and Honig, 2003; Becker 1964). General human capital is regarded as academic qualification and previous business experience of individuals. Specific human capital includes; leather related qualification, environment-specific qualification and previous experience from the leather industry.

1. How are environmental issues understood and described by the owner-managers of SMEs in leather industry in Sialkot and Sheikhupura districts of Punjab in Pakistan?
2. What measures are taken to reduce the environmental impacts of SMEs in the leather industry?
3. What motivates the environmental engagement of the SMEs?
4. How does human capital, in addition to different motivations, inform the adoption of environmental practices of the SMEs?

1.6 Conclusions

This research seeks to explore and describe the role of human capital in environmental engagement of SMEs, in addition to the motivations that inform the adoption of environmental practices of SMEs in the leather industry in Pakistan. Significantly, this research has the potential to contribute to literature due to two reasons. First, the literature on environmental practices of SMEs is largely focused on developed economies and little is known about the environmental engagement of SMEs of developing economies. Second, the research on factors that enable SMEs to adopt environmental practices is limited indeed.

Chapter 2: Literature Review

This chapter presents a review of literature on the environmental practices of SMEs.

2.1 Introduction

It is about two decades now that SMEs are under constant pressure of different stakeholders (consumers, producers and public policy managers) to adopt pro-environmental business practices. Unlike large size firms, SMEs have been identified to be often passive in environmental engagement (Hamann et al., 2009; Spence, 2007; Revell and Rutherfoord, 2003). Previous research has aimed to identify, explore and describe factors that might influence the environmental engagement of SMEs (e.g. Williams and Schaefer, 2012; Brammer et al., 2012; Hofmann et al., 2012). Also, much existing research has been influenced by policy priorities – trying to identify policy tools that might help governments to influence the environmental practices of business organisations, including SMEs (Blundel et al., 2013; Parker et al., 2009). Consequently, given the socio-economic, technological and environmental implications of SMEs - both in the developed and developing economies - the understanding about the factors that not only motivate but also enable the adoption of environmental practices of SMEs is imperative, essentially to stimulate pro-environmental behaviour amongst SMEs.

The following discussion is structured in two sections. Section 2.2 illustrates recent literature on environmental practices of SMEs. The implications of the literature review are discussed in section 2.3, which concludes the chapter.

2.2 Recent Research on the Environmental Practices of SMEs

Just like the heterogeneous characteristics of SMEs, the factors informing their environmental practices may also be diverse. Such a uniqueness of SMEs can be attributed to a number of factors. For example, in comparison with large size firms where company itself is an entity or is owned by a number of people, SMEs are often owned by an owner-

manager or few persons. Amongst SMEs, the management styles are less bureaucratic and the working environment is generally flexible. Due to differences in human resource endowment, SMEs also vary in terms of their stock of knowledge, skills and experiences, including technological competencies and networking with other firms. Therefore, SMEs may pursue environmental opportunities and/or respond to environmental pressures in their own contexts. While some SMEs may be pro-active in their environmental engagement, others may take a reactive and/or passive stance. The following subsections illustrate literature on different possible factors of environmental practices of SMEs.

2.2.1 The Compliance with Environmental Regulations

A likely common motivator for SMEs to operate in an environmentally-benign way is the compliance with environmental regulations. However, the exact impact of environmental legislation on environmental practices of SMEs is not known. It has been argued that the compliance with regulations may be absent, largely, due to the complexities and costs attached with their implementation (Wilson et al., 2012; Mir, 2008). A recent qualitative study, for example, explores that 'the implementation of environmental legislation has not been effective' for SMEs in UK - mainly due to lack of 'familiarity' and 'understanding' about the environmental laws (Wilson et al., 2012). At the same time, some survey-based studies reveal that compliance is a cost for SMEs and therefore reduces their profitability (Mir, 2008; Patton and Worthington, 2003). Yet, to ensure their survival, SMEs comply with regulations (Patton and Worthington, 2003). However, such compliance at a bare minimum level might place SMEs at a reactive end towards their environmental commitments (Mir, 2008; Bradford and Fraser, 2008; Revell and Blackburn, 2007).

While some authors have considered SMEs' compliance with regulations as reactive and only doing the bare minimum and are therefore not considering legislation as very effective, other authors see regulation as the chief means of engaging SMEs with environmental issues and would like to see more regulation (Masurel, 2007; Revell and

Rutherfoord, 2003; Tilley, 1999). In one UK study, for example, owner-managers of SMEs were identified to be happy to 'accept the costs of tougher environmental regulations and taxation' (Revell et al., 2010). This was mainly because the SMEs in that study perceived environmental opportunities and competitive advantage in compliance, although in the long-run.

Given the difficulties of SMEs to follow environmental regulations, some authors have argued that SMEs would take time to be considerably driven by legislation because they lack capabilities to observe these rules (Wilson et al., 2012; Williamson et al., 2006). It may imply that legislation can be considered a motivation of environmental engagement for SMEs provided regulations are comprehendible and their implementation is not resource intensive (Williamson et al., 2006).

2.2.2 The Business Case for Sustainability

The second possible motivation for SMEs to adopt environmental practices can be profitability and competitiveness. According to Collins et al. (2007), green business practices might not only affect the financial performance of SMEs but also their competitiveness. Similarly, Thorpe and Prakash-Mani (2003) argue that environmental initiatives benefit SMEs and these benefits might come in the form of reduced costs, increased revenues and enhanced reputation. Supporting Collins et al. (2007) and Thorpe and Prakash-Mani (2003), Fresner and Engelhardt (2004) in their case-study based research on Australian small firms find that the adoption of environment-conscious strategies helps SMEs to reduce cost. In a quantitative study of US small businesses, Naffziger et al. (2003) also identify a positive association between environmental concerns, operational efficiency, profit and image of firms.

Conversely, some other researchers argue that SMEs are not convinced by the argument of business case for sustainability. Simpson et al. (2004), for example, assert that environmental responsibility serves as a cost to SMEs in UK and therefore entrepreneurs

are not motivated to voluntarily adopt pro-environmental practices. Revell and Blackburn (2007) support the findings of Simpson et al. (2004) through their case study based research on the construction and restaurant sectors of UK. They argue that the small firms in UK consider pro-environmental practices a drain on profits.

These studies indicate that just like the argument of compliance for sustainability the exact impact of environmental practices of SMEs on profitability and competitiveness is not known. It seems difficult to establish with certainty whether the business case for sustainability generally applies because SMEs are complex and heterogeneous, in terms of their characteristics and the contexts in which they operate.

2.2.3 Personal Ethical Values

Generally, owner-managers of small businesses start ventures which resonate their 'personal aspirations and philosophies' (Williams and Schaefer, 2012). It is therefore hard to isolate the influence of owner-managers' personal values from the vision and practices of their enterprises (Williams and Schaefer, 2012; Collins et al., 2010; Revell et al., 2010; Battisti and Perry, 2010). Thus, environmental values of owner-managers can be a possible motivator of environmental engagement of SMEs.

In a qualitative study, while exploring the motivations of environmental engagement in the SMEs of UK, Williams and Schaefer (2012) have found that managers' values play an important role in their pursuit of environmental practices. Williams and Schaefer (2012) conclude that while advisory services tend to campaign on the basis of the business case for sustainability, their emphasis should be more on promoting value-driven environmental engagement in SMEs. These findings are supported by studies outside the UK context. For example, Battisti and Perry (2010) describe that in New Zealand, in addition to the motivations of cost saving and competitive advantage, environmental practices of SMEs are also driven by the personal ethical values of owner-managers. Similar findings are reported for SMEs operating in the US wine industry (Cordano et al., 2010). This study

asserts that environmental engagement of SMEs and their owner-managers' attitudes and norms are significantly associated.

2.2.4 SMEs and Environmental Practices: The Role of Human Capital

Researchers have identified various motivations for environmental engagement of SMEs, including compliance with regulations (Wilson et al., 2012), profitability and competiveness (Collins et al., 2007) and personal ethical values (Williams and Schaefer, 2012). Although this research has generated new insights, relatively less attention has been paid to what enables environmental practices of SMEs, such as human capital.

Individuals (owner-managers and employees) are an important asset of SMEs. The human capital embedded in these individuals carries implications for SMEs to engage in diverse economic and social activities, including environmental practices. Human capital represents the knowledge and skills that individuals learn through formal and informal sources (Davidsson and Honig, 2003; Becker, 1964). According to Dakhli and Clercq (2004), human capital can be classified as human-specific capital, firm-specific capital and industry-specific capital. The human-specific capital includes academic education, vocational training and managerial and entrepreneurial experience of individuals. Human-specific knowledge can be used across firms and industries. The firm-specific capital refers to the knowledge and skills that individuals accumulate and develop while working in a specific firm. The application of firm-specific knowledge and skills is strict to a firm's context and therefore is not applicable across firms and industry. The third form of human capital, industry-specific capital, represents the knowledge and skills individuals may gain while working in a specific industry. Industry-specific human capital can be used across firms and industry.

Through human capital development individuals can learn new knowledge and skills to do things in new ways (Coleman, 1988). This knowledge and skills can come through two sources i.e. tacit and codified. Tacit knowledge (know-how) comes though learning by

doing whereas codified knowledge (know-what) is embedded in processes and procedures (Davidsson and Honig, 2003). Knowledge and skills become even more valuable when they are complemented by experience. Increased human capital can lead to an increase in the productivity and efficiency of individuals. Therefore, if environmentally driven opportunities arise, SMEs better endowed with environmentally relevant human capital may pro-actively adopt environmental practices. Whilst there is limited literature that examines the impact of human capital on environmental practices of SMEs, a few studies can be traced. For example, Gadenne et al. (2009), Cloquell-Ballester et al. (2008), Schaper (2002) and Tilley (2000). Although these studies do not exclusively examine the interplay between human capital development and environmental engagement of SMEs, yet considering the dearth of literature in this strand these can be regarded as indicative examples.

The study by Schaper (2002) is focused on the identification of predictors of environmentally responsible behaviour of SMEs operating as retail pharmacies in Western Australia. This study indicates that formal education of owner-managers is not a significant predictor of green practices of SMEs. Another study (Gadenne et al., 2009) investigates the environmental practices of SMEs in the Queensland region in Australia. In contrast with Schaper (2002), Gadenne et al. (2009) not only consider the formal educational level of entrepreneurs but also their environmental awareness as predictors of environmental practices of SMEs. Their findings, similar to Schaper (2002), suggest that formal education of owner-manager does not significantly inform the environmental engagement of SMEs. However, the environmental awareness of owner-managers is identified to be a significant predictor of environmental practices of SMEs. Both these studies conclude that relative to formal education, the informal learning about environmental issues and access to environmental information (for example, through suppliers and environmental educational interventions) are better predictors of environmental engagement of SMEs. A significant limitation of these studies is that these only focus on owner-managers, whereas employees

would also seem to be a crucial resource for SMEs (Cloquell-Ballester et al., 2008). To some extent, Tilley's (2000) study can be considered to have taken into account both the owner-managers and employees. According to Tilley (2000), 'Low standards of eco-literacy are common among small firm owner-managers and employees, which in turn reduces their awareness of environmental issues' (p.35). To address this weakness, Tilley (2000) has proposed that 'Since the owner-manager has a low awareness of environmental issues combined with a low level of ecoliteracy, small firms must rely on external experts to guide their decision-making processes and to provide them with appropriate solutions to environmental problems' (p.37). This finding by Tilley (2000) is also confirmed by Gadenne et al. (2009), who have identified that environmental awareness of owner-managers informs the environmental engagement of SMEs.

Some entrepreneurs may take initiatives to develop environmentally relevant competencies of their employees. Most common measures can be the arrangement of environmentally relevant trainings and awareness programmes (Cloquell-Ballester et al., 2008). At the same time, eco-conscious employees might also take steps to behave pro-environmentally. They may, for example, opt for transport sharing with their colleagues and get environmental certifications to increase their environmentally relevant stock of skills and experience (Williams and Schaefer, 2012; Brammer et al., 2012). Although, the studies by Williams and Schaefer (2012) and Brammer et al. (2012) do not specifically focus on environmentally relevant human capital development but at least tell something about employee related initiatives taken for environmental engagement amongst SMEs.

The above review of literature indicates that human capital can have implications for SMEs to adopt environmental practices. However, crucially, this strand of literature is significantly under-researched. Consequently, this research aims to contribute to this stream of literature.

2.3 Implications of Literature Review

The review exposes that the literature on environmental practices of SMEs is an embryonic stem of research on social and ethical aspects of businesses. Table 2.1 presents a snapshot of broader theoretical development of this nascent field of research and therefore helps to identify gaps in literature to be addressed in this research.

The literature reviewed for this study indicates that much of the research on environmental practices of SMEs is focused on developed economies. Therefore research in the context of developing economies is scant. However, a few recent studies indicate that researchers have started to explore the environmental practices of SMEs in developing economies. For example, Yu and Bell (2007) have identified that - in China - the main motivation for SMEs to adopt environmental practices is improvement in the firm's image. In another study, Zhang et al. (2009) found that the SMEs operating in Suzhou Industrial Park in China are largely driven by legislation to adopt environmental management practices. Nonetheless, research into environmental practices of SMEs in developing economies remains limited both in number and in scope, for instance in terms of the industries and countries considered. Consequently, to fill the void in literature, the focus of this research is a developing economy i.e. Pakistan.

In addition to that, it cannot be assumed that the determinants of environmental practices of SMEs identified in developed economies may also hold true for developing economies. Also, the extant literature identifies a number of motivational factors of environmental practices of SMEs but, little is known about what enables SMEs to go beyond motivations to adopt pro-environmental behaviour. This research therefore aims to explore the influence of resources and capabilities of SMEs on their environmental practices, especially the human capital.

To conclude, given the gaps in literature much needs to be done to explore how different resources and capabilities shape the environmental practices of SMEs. While a more

substantial study[7] might investigate a number of economic and non-economic enablers of environmental engagement of SMEs, this MRes project aims to explore how, in addition to motivational factors, human capital of SMEs inform their environmental practices in the leather industry in Pakistan.

Chapter 3 will outline and justify the methodological choices for this study.

[7] Ensuing PhD Research Project.

Table 2.1

Broader Theoretical Perspectives on Environmental Practices of SMEs

Streams of Literature	Researchers (Some Examples)	Status of Theoretical Development
Environmental Practices of SMEs: An Emerging Area of Research	Blundel et al., 2013; Williams and Schaefer, 2012; Brammer et al., 2012; Wilson et al., 2012; Hofemann et al., 2012; Battisti and Perry, 2011; Revell et al., 2010; Calogirou et al., 2010; Collins et al., 2010; Cordano et al., 2010; Parker et al., 2009; Gadenne et al., 2009; Hamann et al., 2009; Zhang et al. (2009); Cloquell-Ballester et al., 2008; Revell and Blackburn, 2007; Yu and Bell (2007); Williamson et al., 2006	▪ An embryonic stem of research on social and ethical aspects of businesses ▪ Crucially, focused on developed economies ▪ Theoretical development calls for developing economy focused research
Compliance with Environmental Regulations and SMEs	Wilson et al., 2012; Revell et al., 2010; Mir, 2008; Bradford and Fraser, 2008; Revell and Blackburn, 2007; Williamson et al., 2006; Patton and Worthington, 2003; Revell and Rutherfoord, 2003	▪ Reasonable corpus of studies ▪ Developing economy perspective not explored yet
Business Case for Sustainability and SMEs	Collins et al., 2007; Masurel, 2007; Fresner and Engelhardt, 2004; Naffziger et al., 2003; Thorpe and Prakash-Mani, 2003; Revell and Blackburn, 2007; Simpson et al., 2004	▪ Reasonable corpus of studies ▪ Developing economy perspective not explored yet
Personal Ethical Values and SMEs	Williams and Schaefer, 2012; Battisti and Perry, 2011; Collins et al., 2010; Revell et al., 2010; Cordano et al., 2010	▪ Under-researched ▪ Developing economy perspective not explored yet ▪ Potential future research area
Enablers of Environmental Engagement of SMEs	Hofmann et al., 2012; Gadenne et al., 2009; Cloquell-Ballester et al., 2008; Schaper, 2002; Tilley, 2000	▪ Under-researched ▪ Both developed and developing economy perspectives are yet to be explored ▪ Potential future research area

Chapter 3: Methods of Data Collection

3.1 Introduction

This chapter discusses the selection of an appropriate research methodology for this study, including the rationale for selecting the research design and method of data collection. Towards the end of the chapter, ethical issues attached with this research are also discussed.

3.2 The Research Approach

The selection of a suitable research design can be informed by the philosophical stance of a researcher and the nature of research question(s) (Easterby-Smith et al., 2008; Bryman and Bell, 2007). At the same time, the research questions also inform the selection of an appropriate approach to data collection and analysis (Bryman and Bell, 2007). Given the identified gap in literature (Chapter 2) and considering the exploratory nature of research questions of this study (Chapter 1), the study is framed within the qualitative tradition of research using multiple-case study research design (Blundel et al., 2013; Muller et al., 2012; Yin, 2009; Easterby-Smith et al., 2008; Bryman and Bell, 2007; Williamson et al., 2006; Eisenhardt; 1989).

For doing research, a researcher can adopt quantitative, qualitative or a mixed method approach. Generally, the quantitative researchers assert that 'social world exists externally' and therefore can be understood in an objective way (Easterby-Smith et al., 2008, p.57). Often, these researchers develop hypotheses and test theories by using numbers and quantifications. Their primary focus is to make research findings generalizable through statistical inferences. On the other hand, mostly the qualitative researchers assert that 'reality is not objective and exterior' rather is socially constructed by people through their interactions and experiences (Easterby-Smith et al., 2008, p.58-59). Generally, the primary aim of qualitative researchers is to increase 'general understanding of the situation' by

gathering 'rich data' (Easterby-Smith et al., 2008, p.59). Most often these qualitative researchers, instead of testing theories, try to expand the boundaries of knowledge by expanding or developing theories. Their main aim is to understand and describe the complexity of issues rather than achieving generalization of findings. Thus, qualitative researchers are more likely to adopt an open-ended exploratory research approach.

This study does not aim at testing a theory, which is generally typical of quantitative research. Rather the objective is to explore themes and constructs from primary data, which would capture the environmental practices of SMEs. Therefore, as compared to quantitative research strategy, qualitative research approach is considered appropriate for this research. Also, most recently researchers have started to adopt quantitative approach to investigate the environmental practices of SMEs (e.g. Hofmann et al., 2012; Brammer et al., 2012; Liu et al., 2012). Such quantitative studies do highlight the factors of environmental practices of SMEs but do not extend an account of how and why the identified factors inform the environmental engagement of SMEs. Consequently, this research adopts a qualitative research strategy with the aim to contribute to literature by explaining why and how SMEs get environmentally engaged.

3.3 The Research Design

As is already described, the focus of this research is to extend an intensive analysis of the data rather than achieving generalization of findings. To achieve this aim, multiple-case study research design is used. Bryman and Bell (2003) have argued that the use of multiple-cases 'improves theory building' process by providing a comparative understanding of the circumstances under which theory might hold true or not (p.59). At the same time, it is expected that the use of multiple-cases shall help to identify issues at a broader level in this MRes project, which shall be explored more intensively later on in a more substantial study.

While case study research design is considered supportive for an exploratory research, this research design has also been subjected to criticism. For example, some researchers assert that the use of multiple cases might not allow a researcher to have rich analysis of a case because the researcher enters into a contrasting mode while analysing the cases (Dyer and Wilkins, 1991). Yet, for theoretical advancement of a nascent discipline like environmental practices of SMEs, 'inductive process of data generation' can better support the research aim (Janesick, 1998; Yin, 2009). Additionally, this pilot study is expected to provide an experience of using the selected research design to inform the ultimate methodological choices for the future research project[8]. Thus, 8 SMEs were selected as cases for this study. Easterby-Smith et al. (2008) have described that 'the case study looks in depth at one, or a small number of, organizations, events or individuals, generally over time' (p. 97). This is an exploratory study, which aims to inform a substantial project[9]. Therefore the case study in this research means an investigation of a small number of firms with moderate amount of depth and it is cross sectional in nature.

3.4 The Methods of Data Collection

While detailed discussion on the practical issues of data collection is submitted in chapter 4, this subsection of the chapter gives a brief account of the methods of data collection used in this research.

Rooted in qualitative research approach and case-study research design, semi-structured in-depth interviews were used in this research to collect empirical data. An example of research using semi-structured interviews for exploring the dynamics of environmental behaviour of SMEs is a study by Williamson et al. (2006). The purposeful use of semi-structured interviews for data collection was driven by two reasons, as is also described by Easterby-Smith et al., (2008). First, the researcher was interested in knowing the

[8] PhD research work.

[9] PhD research project.

perceptions of interviewees about different aspects of environmental practices of their respective SMEs. Second was to explore, why those particular perceptions were held.

As far as the sample is concerned, seven owner-managers and one senior-manager representing tanneries and leather garment manufacturing units were interviewed. All the SMEs were from the Punjab province in Pakistan, which houses the largest number of leather units in the country and therefore well represents the industry. For selecting the SMEs, a two pronged strategy was adopted. Initially, the owner-managers of purposively selected SMEs from the database of Sialkot Chamber of Commerce were contacted through telephone. Once access was gained to some SMEs, snowball sampling was used to gain access to some other SMEs.

All the interviews were conducted at a distance and were digitally recorded, using Skype. Considerably, this study has benefited from the deliberate choice of using Skype instead of telephonic interviews. Skype helped to have more interactive discussions, spontaneous responses and also the recording of facial expressions of the interviewees. So, it was much like conducting real life face-to-face interviews. Unlike a telephonic interview, the visual presence of researcher raised the comfort level of interviewees as they could see who they were talking to. Mostly, the interviews were conducted when owner-managers were in their offices. The researcher found himself in a better position to stop or continue interviewing by seeing if the owner-managers had to deal with some business affairs or talk to their staff or customers. In case of a telephonic interview owner-manager could ask to call-back in a while, which could lose access as the entrepreneur could get too busy. Thus Skype kept researcher's presence on site and therefore facilitated the smooth flow of data gathering.

As is the common practice in qualitative research, interviews were transcribed for analysis. All the transcriptions were done by the researcher himself, which also helped to develop an initial understanding of the data.

3.5 Ethical Issues Related to this Research

The ethical principles are meant for 'protecting the interest of the research subjects' and 'ensuring accuracy and, lack of bias, in research results' (Easterby-Smith et al., 2008). The broader ethical guidelines for social researchers include; 'not harming the participants, gaining informed consent, protecting anonymity, respecting dignity, protecting privacy, ensuring confidentiality, avoiding deception, honesty and transparency in communication, declaring possible conflicts of interests, and avoiding misleading and false reporting of results' (Easterby-Smith et al., 2008, p.134). To ensure that research was done and disseminated fairly, the Open University's 'Ethics Principles for Research Involving Human Participants'[10] were followed. For this study, ethical approval was also gained from the Open University Human Research Ethics Committee (Appendix-3A). No vulnerable groups were engaged in this research. Therefore not very significant ethical issues could be anticipated to surface during data collection but, to gain informed consent of entrepreneurs, keeping them anonymous and honestly reporting the ground realities. To gain the consent of interviewees for their participation in the study and interview recording, a project information sheet and consent request document (Appendix-3B) was e-mailed to them. The interviewees preferred to give an oral consent, which was recorded. As was agreed, all the respondents were kept anonymous in transcriptions. Moreover, some information was not transcribed because respondents had requested not to expose that. Finally, the analysis is reported with honesty and gives the true picture of what was told by the interviewees.

An assistant was engaged to set up Skype in the field -where needed - so some issues of confidentiality could emerge. Also, some interviewees might object to the presence of an assistant during interviews. Others might hesitate to share information openly in the presence of a third person who was not the researcher. Considering these ethical issues, it was made sure that a reliable and competent person was selected as assistant. Therefore, an

[10]http://www.open.ac.uk/research/main/sites/www.open.ac.uk.research.main/files/files/OU%20Ethics%20Principles%20for%20Research%20Involving%20Human%20Participant.pdf

assistant was chosen who had previously worked with the researcher in field based projects and with whom the researcher had established a level of trust. Where needed previous joint research work between the researcher and the assistant was mentioned to the interviewees to win their trust to allow the assistant to be there during interviews. Also, there was mutual understanding between the researcher and the assistant that the assistant would not keep any copy of the gathered information and any original data would be given to the researcher.

3.6 Conclusions

To conclude, being exploratory in nature this study adopted a qualitative research approach and multiple-case study research design. Semi-structured interviews were used to collect data. Purposive and snowball sampling was used to select and access the owner-managers. During this study, the ethical principles as outlined by the Human Research Ethics Committee of the Open University, UK were observed. It is hoped that the research approach adopted and the methods chosen for this study would inform the ultimate choice of research methodology and methods for the ensuing PhD project.

Chapter 4 discusses in detail the procedural and practical issues of data collection and analysis.

Chapter 4: Collection and Analysis of Data

4.1 Introduction

This chapter discusses the approach to data collection and analysis adopted in this research. The learning outcomes of each stage are also described. Following a brief explanation of the profile of sample SMEs, practical challenges faced while gaining access to interviewees are discussed. The choice of semi-structured interviews as data collection method and the use of thematic analysis for data analysis are rationalised. The chapter concludes with discussion on ethical parameters observed while collecting and analysing the data.

4.2 Profile of the Sample SMEs

For this research, the data were gathered from a sample of 8 SMEs. The SMEs were from the Punjab province of Pakistan (Figure-1C in Appendix-1B). Of these, 5 SMEs were from Sialkot district and 3 were from Sheikhupura. Product wise, 4 SMEs were leather garment manufacturing units, 2 were tanneries, 1 was a trading concern of semi-manufactured leather and another 1 was a tannery as well as a leather garment and gloves manufacturing unit. Such a mixed sample was chosen to have an overall feel of the kind of SMEs operating in the industry and also to determine if some specific segment of SMEs would be required to research deeper while doing a more substantial study[11]. All the sample SMEs were locally owned and most of these were operating both in domestic and foreign markets. For SME-specific details see Appendix-4A.

4.3 Gaining Access: The Practical Challenges Faced

The activity of gaining access to interviewees started in the last week of May 2013. It took three weeks to gain access. Subsequently, the Skype-based interviews started in the second week of June 2013. The data collection phase was concluded in the first week of July 2013.

[11] The PhD project

The following discussion describes the challenges faced and the strategies adopted to address those challenges while gaining access to the SMEs.

Negotiating and maintaining access is an integral part of field-based research. According to Punch (1998), *'fieldwork is definitely not a soft option, but, rather, represents a demanding craft that involves both coping with multiple negotiations and continually dealing with ethical dilemmas'* (p.159). A researcher can successfully complete this phase of research by following certain principles. For example, the use of inter-personal skills is one such principle that might be the most effective tool during initial phases of gaining access (Easterby-Smith et al., 2008). However, 'negotiating access to data is not a once-and-for-all process at the beginning but may be necessary again and again throughout the research process' (Taylor and Smith, 2008, p.38).

A number of challenges were anticipated while gaining access to the interviewees. For example, the research project might not appeal to the interviewees, they might consider it an academic activity not benefiting their businesses and they might also be concerned about the confidentiality of information. These issues were dealt with realistic planning. Building on previous experience of researching the fan manufacturing and auto-part manufacturing SMEs in Pakistan, the access strategy was crafted in two stages. First was a telephonic contact to gain consent of the owner-managers to participate in the study. As a second step, formal emails were sent to the selected interviewees requesting to schedule an interview. Eventually, data were gathered through Skype-based interviews. Mostly, the interviews were video recorded. However, in some cases interviews had to be audio recorded either because the internet coverage was not good enough to record video or the respondents did not have access to a webcam. The telephonic contact provided an opportunity to give a brief verbal presentation of the research project to the targeted interviewees. It not only proved helpful in gaining consent of owner-managers to participate in the study, but also to get acquainted with them so that at the time of interview

they did not feel like talking to an unknown person. For further details on step-by-step strategies adopted for gaining telephonic access, see Appendix-4B.

Following the telephonic contact, formal requests for interviews were sent through emails. With emails were also attached the project information sheet and the consent request document. Hardly any email was responded. Subsequently, owner-managers were contacted again telephonically. On re-contacting, all the owner-managers extended the excuse that they were too busy to respond to the email. Ultimately, negotiations resulted in successfully scheduling eight Skype-based interviews. Consequently, a plan for interviews (Appendix-4C) was prepared and interviewees were contacted on the agreed date and time. Due to internet connectivity problems, two interviews had to be rescheduled. One interviewee, despite many failing connectivity attempts, had to be interviewed away from his unit. For this purpose, a local contact proved helpful as their guestroom (which had the facility of internet) was used for two hours to conduct the interview.

Once an organization is accessed, relationship with owner-managers needs to be built on strong footings to keep it 'getting on' (Buchanan et al., 2007). In doing so, 'cooperation and trust' play an important role (Easterby-Smith et al., 2008). To raise the trust of interviewees, assurance was given to keep them anonymous and to use information for academic purposes only. The interviewees were also asked if they wanted any information not to be considered for analysis. Some interviewees asked for it. Therefore, as agreed, some parts of two interviews were not transcribed. In addition to that the use of 'soft language', avoidance from threatening language'[12] and, considering the cultural aspects

[12] Buchanan at al., (2007) have proposed that use of words like; 'research', 'interview' and 'publish' should be avoided. Less threatening wording would be more appropriate For example, I want to 'learn from your experience', I want to have a 'conversation' with you, and I want to 'write an account'.

communication in local language (Urdu) proved quite helpful to gain and maintain access[13].

It was also anticipated that some respondents might not be comfortable with interview recording. In such a situation, in addition to the support from the research assistant engaged for the local support, efficient note taking and mental attentiveness were to be used as key recorders. However, this challenge did not emerge because all the interviewees agreed for recorded interviews.

4.4 Data Collection: The Use of Semi-structured In-depth Interviews

For qualitative research, one of the methods of data collection is interviews. Informed by the research questions, interviews can be conducted in fully-structured, semi-structured or in an unstructured form (Easterby-Smith et al., 2008, p.143). If a researcher aims to unfold the perceptions of interviewees then semi-structured in-depth interviews are considered quite helpful (Easterby-Smith et al., 2008, p.144). The semi-structured interviews are also considered useful for 'producing rich and valuable data' (Punch, 2005, p.172) to 'gain an understanding from the respondent's perspective which includes not only what their viewpoint is but also why they have this particular viewpoint' (Easterby-Smith et al., 2008, p.144). Given the aims and objectives of this research, data were collected using semi-structured interviews. On average, an interview lasted for 30 to 45 minutes. Where considered necessary, unplanned probes were used to develop better understanding of issues. For this purpose, the laddering technique of interviewing was effectively used (Easterby-Smith et al., 2008, p.146). To ensure that focused and relevant information was gathered, an interview schedule covering the broader research questions was drafted (Appendix-4D).

[13] To keep the relationship going-on and access the SMEs for extensive information gathering for the ensuing PhD project, the researcher is in continuous contact with the interviewees by extending warm wishes on local events.

Using personal links, a research assistant was engaged from GC University, Lahore (where researcher has been serving as Assistant Professor). The research assistant's main role was to set-up Skype calls only, where needed. He did not have any role in drafting or asking the questions. All the responsibility of data collection and analysis was duly undertaken by the researcher himself. The research assistant was not paid for his services. He agreed to facilitate the researcher for two reasons. Firstly, out of the courtesy of being an old research fellow. Secondly, for him the incentive was to have an exposure to the interviewing techniques, which he expressed he would be practicing in his future research. An important reason for choosing this person was that he had worked with the researcher in a higher education research link with University of Strathclyde - the project which explored the growth dynamics of SMEs of fan industry in Pakistan. Based on previous experience of working together, there was a shared understanding that information would be kept confidential. Moreover, all the interview recordings were done and kept by the researcher to which the assistant did not have access. Indeed, the research assistant proved helpful in gathering additional evidence, which included observations and photographs of the premises of SMEs (where permitted). Nevertheless, the owner-managers were found reluctant while sharing their firm's internal documents with the research assistant. However, it was agreed that access to these documents would be given when SMEs would be visited by the researcher in person[14].

At the start of each interview, general questions about the problems of leather industry were asked. This strategy helped to stimulate the thoughts of interviewees and also made them at ease for discussion on environmental issues, at a later stage. Another objective of asking general questions was to assess if environmental problems were regarded as considerable problem for the industry. While few interviewees were considerate towards environmental issues without asking environment specific questions, most of them talked

[14] Thus access to firm's internal documents shall be possible during PhD project, as the researcher shall be gathering data by going to the field personally.

about other problems (e.g. shortage of electricity, pricing of the product and lack of support from government).

Deliberately, simple language was used so that the interviewees could comprehend questions to share relevant information (Easterby-Smith et al., 2008, p.149). A pilot interview was conducted to test if the language to be used in interviews was too technical. Accordingly, local language (Urdu) was used for interviews where entrepreneurs were found uncomfortable with English language.

4.5 Thematic Analysis: The Approach to Data Analysis

The stage of data analysis was informed by literature on thematic analysis (Braun and Clarke, 2006; Creswell, 2003; Miles and Huberman, 1994). While some researchers argue that thematic analysis is a generic tool of qualitative data analysis (e.g. Creswell, 2003; Boyatzis, 1998), Braun and Clarke (2006) hold that 'thematic analysis should be considered a method in its own right' (p.78). According to Braun and Clarke (2006); 'thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within data' (p.79). These authors also hold that thematic analysis is 'the first qualitative method of analysis that researchers should learn, as it provides core skills that will be useful for conducting other forms of qualitative analysis' (p.78). Since this MRes project provides a good opportunity for learning skills of doing qualitative analysis, the use of six phases of thematic analysis as proposed by Braun and Clarke (2006) is considered an appropriate choice. To develop skills for doing thematic analysis, the researcher also attended a two days training course, 'Introduction to Qualitative Data Analysis' (Appendix-4E).

Presented in table 4.1 are the six phases of thematic analysis (left column) and the activities undertaken in each phase for this research (right column). For analysis, the interviews were transcribed and initial analysis of transcriptions was done soon after the completion of each interview. The purpose was to incorporate any emerging enquiries in

future interviews. So, data collection and analysis started simultaneously. While most of the interviewees preferred to be interviewed in Urdu, some chose to be bilingual. To ensure trustworthiness and credibility (Lincoln and Guba, 1985) of findings, the correct translation of interviews from local language to English language was imperative. For this, professional support was sought from an expert of English language[15] to check if the translation was correct. Accordingly, proposed changes were considered for improvement.

The initial careful reading of transcripts was done to check their accuracy and also to get familiarised with the data. The reflections were developed by comparing the information and literature. Emerging concepts were coded and catalogued, separately for each case. NVivo, software for qualitative data analysis, could be used but it was not used due to limited data and also lack of expertise[16]. After cataloguing in themes, the categories were re-checked and re-coded (where needed) to ensure that the emerging themes and theoretical links among categories represented what the data had informed. It was important to ensure that researcher was not inadvertently driven by literature-informed categories. The initial analysis was submitted to the supervisory team to have valuable feedback. In the light of feedback, the draft was refined for submission.

[15] She is working as lecturer in English language and literature in a local higher educational institution.

[16] The researcher aims to develop competency of using NVivo by attending some trainings. So, NVivo might be used for the Phd Project.

Table 4.1

Phases of Thematic Analysis

Phases	Description of the Process
Phase I Familiarisation with the data	The interviews were transcribed into the word documents. Transcriptions were read and re-read, with the aims of checking for mistakes and getting familiarised with the data. Following Miles and Huberman (1994), while re-reading the transcripts, marginal notes were taken on the right hand side of the transcriptions to identify the initial ideas emerging from the data, related to the research questions.
Phase II Generating initial codes	The whole data set was systematically coded keeping the research questions in mind. The data related to each code category were collated to search broader themes.
Phase III Searching for themes	Data with similar codes were re-arranged in separate word documents. In total, five word documents were created representing different chunks of data with related codes. Codes were collated into themes.
Phase IV Reviewing themes	Themes were reviewed and thematic maps were also drawn to see if the themes worked in relation to the codes.
Phase V Defining and naming themes	On-going analysis to refine the themes to inform the overall story emerging from the data.
Phase VI Producing the report	The final phase of data analysis. Relevant extracts were selected from the data, relating back to the research questions and the literature to produce a scholarly analysis. This is actually the phase of interpretation of data and is therefore reported in chapter 5.

The following two examples are indicative of the systematic coding procedure followed in this research. For the whole list of descriptive labels, initial and final codes and emerging themes see Appendix-4F.

Example 1

This example is informed by discussion between the researcher and owner-manager of SME3. Below the narrative is the code used for labelling the excerpt. The discussion tells that owner-manager of SME3 regarded waste water as primary environmental issue.

> *RESEARCHER: You are attached with leather industry for last 10 to 15 years. So, what do you think, what are the major environmental issues? What is your understanding about it?*
>
> *Fahad (Owner-manager SME3): Look, first of all its waste water that is mainly the primary issue from environmental perspective because huge volume of water is discharged in the process.*
>
> *Code: EII-W*

Table 4.2

Example 1 of Systematic Coding Procedures

Descriptive Label	Code	Research Question
Water Pollution	EII-W	1

Table 4.2 shows that the descriptive code used to label the concept identified from the above discussion was 'water pollution'. It was coded as EII-W. Here 'EII' stands for environmental issues and impacts and 'W' represents that environmental issues and impacts are related to water pollution. The column labelled as research question indicates that the identified label and code are related to research question 1.

Example 2

The following discussion between the researcher and owner-manager of SME2 informs example 2. Below the narrative is the code used for labelling the excerpt. The discussion tells that SME2 had got environmental certification of ISO 14000 to adopt environmental practices.

RESEARCHER: Do your firm have any certifications?

Razi (Owner-manager SME2): ... Yes, we have 14000.

Code: EE-EC

Table 4.3

Example 2 of Systematic Coding Procedures

Descriptive Label	Code	Research Question
Environmental Certification	EE-EC	2

Table 4.3 shows that 'Environmental Certification' was the descriptive label used to trace the concept from the above discussion. EE-EC was the code used to represent the identified label. Here, 'EE' stands for environmental engagement and 'EC' for environmental certification. This code tells that getting environmentally certified was a measure taken for environmental engagement and it informs research question 2.

While the above two examples are indicative of the systematic procedure followed for coding the data to trace emerging themes relevant to the research questions, the detailed discussion on interpretation of data is presented in chapter 5.

4.6 Ethical Considerations

In this research, observance of ethical principles was an integral part of data collection and analysis phase. The main tenet adhered was honesty. No influential links were used to gain access to the owner-managers. While seeking access, project information was openly

shared. The transcriptions were fairly translated from the local language [Urdu] to the English language. No personal comments were added to the responses of interviewees. Those parts of interviews which were asked not to report were not transcribed. All the interviewees were kept anonymous; the names used are fictitious. While analysing the data, no personal judgements were imposed on the data. Moreover, leading and loaded questions were avoided during interviews. Overall, vigilantly researcher's bias was avoided to ensure trustworthiness of the study.

4.7 Conclusions

This chapter has described the profile of sample SMEs. Strategies adopted to access the interviewees are explained. The rationale for considering purposive and snowball sampling is described. Also the purposive use of semi-structured interviews is justified. Six phases of thematic analysis, as proposed by Braun and Clarke (2006) are elaborated and followed. Systematic coding procedure is explained with examples. Finally, the ethical parameters observed are reported.

Chapter 5 is about the interpretation of data.

Chapter 5: Interpretation of the Data

5.1 Introduction

Based on the approach to data analysis presented in chapter 4, this chapter interprets the data. Relevant extracts are used from transcripts to make the interpretations empirically rich. This chapter is structured in six sections. Following introduction, Section 5.2 describes the perceptions about environmental problems. The measures taken for environmental engagement of SMEs are elaborated in section 5.3. Section 5.4 explains perceived motivations for adopting environmental practices. The influence of human capital on environmental engagement of SMEs is discussed in section 5.5. Finally, section 5.6 concludes this chapter.

5.2 Perceptions on Environmental Problems

When researching the environmental practices of SMEs, it is important to understand the perceptions of owner-managers about environmental problems. It is important because their perceptions, of course in addition to other factors, can be an important source of informing the environmental engagement of SMEs. Using thematic analysis, the responses of interviewees were categorised as 'environmental issues' and 'environmental impacts', which informed the broader theme of 'environmental problems'. Here 'environmental issues' represent different types of pollution and 'environmental impacts' capture the effect of pollution on individuals and natural resources. Amongst the environmental issues, water pollution was described as the leading issue followed by air and noise pollution as secondary level issues (Table 5.1). For water pollution, the main source was described to be the waste water discharged while tanning the hides. Generally, air and noise pollution were explained to be caused by the generators - used to address shortage of electricity. However, furnace oil (used to run the boilers due to shortage of gas) was also ascribed to be a contributor to air pollution.

The owner-managers who described water pollution as the only environmental issue may be regarded as having narrow perception of environmental issues - an example is owner-manager of SME1 (Table 5.1). On the other hand, the owner-managers who in addition to water pollution also regarded air and/or noise pollution as environmental issues may be considered to have broader perception of environmental issues - an example is owner-manager of SME2 (Table 5.1). The following excerpts are indicative of these interpretations.

> ***Razi*** *(Owner-manager SME2): I think the major cause [of environmental problems] is water, the water that we throw into the drains...The main impact comes from water...I think so, it is waste water...Of course, generators [also] cause pollution...Generators are noisy and cause pollution...*
>
> ***Fahad*** *(Owner-manager SME3): Look, first of all its waste water. That is mainly the primary issue from environmental perspective because huge volume of water is discharged in the process...So, mostly the tanneries which are established in Pakistan...are located on the banks of 'Daiks' [local term used for a big drain]. So that the waste water, the water that contains chemicals is drained to these 'Daiks'.*
>
> *Ali (Senior manager SME5):...Water pollution. This one is the biggest [issue]...furnace oil [also] has quite a significant environmental impact. [RESEARCHER: What is that?]...That burns and creates carbon. And carbon is like diesel generates smoke, it also generates smoke...*

Table 5.1

Perceived Environmental Problems

Environmental Problems								
Themes / SMEs	Environmental Issues			Environmental Impacts				
	Water Pollution	Air Pollution	Noise Pollution	Decline in the Productivity of Land	Adverse Impacts on Individuals' Health	Extensive Fuel Consumption through Generators	Marine Life Dying	Damage to Ozone Layer
SME 1	✓			✓	✓			
SME 2	✓	✓	✓	✓	✓	✓	✓	✓
SME 3	✓			✓	✓	✓		
SME 4	✓		✓	✓	✓		✓	
SME 5	✓	✓		✓	✓	✓		
SME 6	✓		✓		✓	✓		
SME 7	✓							
SME 8	✓							

(Source: Skype-Based Interviews, June–July 2013)

The interviewees also expressed their perceptions about the environmental impacts of water, air and noise pollution [Table 5.1]. The most common negative impacts of pollution were perceived to be the decline in productivity of land and adverse effects on individuals' health. Overall, as the following excerpts also show, the perceived environmental impacts ranged from spread of a number of diseases, at individual level, to the deterioration of natural resources including reduction in the productivity of land, non-availability of drinking water, the death of marine life and extensive use of fuel to run generators, at regional and national levels.

> ***Zaki*** *(Owner-manager SME1):...agricultural land is disturbed by polluted water...[land] absorbs polluted water which disturbs the crops. Also diseases spread due to this water...*
>
> ***Razi*** *(Owner-manager SME2): ...if we see we do wrong in our tanneries...The waste water...[that] is used to irrigate vegetables is causing diseases...like hepatitis C, B and a lot of cancers...Generators [also]...cause pollution...their waste goes into air and disturbs ozone layer...*
>
> ***Yaqoob*** *(Owner-manager SME4): It [generator] makes a lot of noise. You can say it generates a lot of depression. Everyone here is angry all the time.*
>
> ***Yaqoob*** *(Owner-manager SME4): When the waste (water) is drained into main drains, fish and other animals die due to its hazardous effects. We often see while passing by the drains that dead fish are floating on the surface of water.*

It is important to re-emphasize here that while some owner-managers expressed better understanding of environmental problems, the others were less aware of these. Consequently, for some owner-managers, lack of awareness about environmental issues may be limiting their realisation about environmental impacts (NetRegs, 2005; Schaper, 2002). While this research explores the perceptions of owner-managers about environmental problems, the future studies can extend this line of enquiry to know why the

owner-managers hold certain perceptions about environmental problems and if different perceptions are held by other owner-managers.

5.3 Measures Taken for Environmental Engagement

This section interprets data about the environmental practices pursued by the sample SMEs. The thematic analysis of data shows that, broadly, these practices include; access to and use of environment friendly inputs, getting environmentally certified, resource saving practices and pollution prevention measures (Table 5.2). While 5 SMEs were found to be adopting different environmental practices (these SMEs are labelled as environmentally engaging SMEs), the other 3 were identified to be environmentally non-engaging firms (Table 5.2). Although most of the identified environmental practices do not differ much from what the literature on developed economies informs (e.g. Williams and Schaefer, 2012; Hofmann et al., 2012; Brammer et al., 2012; Battisti and Perry, 2011; Collins et al., 2007; Williamson et al., 2006), yet some industry-specific measures such as installation of waste water treatment plant, use of environment friendly chemicals, careful printing of packaging materials and arrangements for the exhaust of generators; give an opportunity to add to the list of environmental practices of SMEs. The following four subsections discuss the described environmental practices of sample SMEs with support of excerpts from the data.

5.3.1 Access to and Use of Environment Friendly Inputs

Generally, firms cannot produce all what they need to fulfil the requirements of their operations. They, therefore, may develop linkages to generate and gain access to resources. It also applies to the SMEs selected for this research. All the environmentally engaging SMEs were found to have established inter-firm linkages (Gold et al., 2010; Ciliberti et al., 2008) for getting raw materials from eco-friendly suppliers. Although the establishment of inter-firm linkages was ascribed to adopt environmentally benign production processes, yet the main factors informing these relations were identified to be the pressure from eco-conscious customers and the 'business opportunity' vested in such buyers (Battisti and

Perry, 2011; Gold et al., 2010; Collins et al., 2007). Thus, in this study, for environmentally engaging SMEs establishment of inter-frim linkages to access eco-friendly inputs is less of an SME driven initiative and more of a customer enforced practice (Gold et al., 2010).

> ***Zaki*** *(Owner-manager SME1):...we enter into an agreement with a tannery that...raw material...shall come from [them]...we work with those tanneries which provide us [environmental] certificates. What chemical they process, the laboratory reports of those chemicals and the certificates are with us...*
>
> ***Razi*** *(Owner-manager SME2): The chemicals we are purchasing and using come from fully Italian based companies. We also get certification from them. These certificates indicate that the chemicals do not have elements which are banned by European countries.*

5.3.2 Environmental Certification to Comply with Environmental Standards

Not only the environmentally engaging SMEs were establishing links with environmentally responsible suppliers, they were also getting environmentally certified to comply with environmental standards. All these SMEs had ISO-14000 certification, which is about environmental management systems. However, getting certified was described to be a reactive initiative - the reaction to customer requirements and legislation (Cassells et al., 2011). One of the owner-managers described that another reason of getting environmentally certified was to raise the goodwill of firm (Naffziger et al., 2003), which suggests that reputation is also a driver of environmental engagement for some of the sampled SMEs. The following excerpts support these interpretations.

Table 5.2

Environmental Practices of SMEs in Sialkot and Sheikhupura Districts of Punjab, Pakistan

		Environmentally Engaging SMEs					Environmentally Non-Engaging SMEs		
Themes	**Measures Taken**	**SME1**	**SME2**	**SME3**	**SME4**	**SME5**	**SME6**	**SME7**	**SME8**
Access to and Use of Environment Friendly Inputs	Linkages with Environment Conscious Suppliers of Raw Materials	✓	✓	✓	✓	✓			
	Use of Environment Friendly Chemicals		✓			✓			
Getting Environmentally Certified	Environmental Certifications	✓	✓	✓	✓	✓			
Resource Saving Practices	Limited Use of Generator to Save Fuel			✓					
	Using Energy Saving Lights	✓	✓	✓	✓	✓	✓	✓	✓
	Adoption of Energy Saving Methods of Production			✓		✓			
	Workers' Training for Energy Saving Methods of Production					✓			
	Using minimum Packing Materials		✓			✓			
	Careful Printing of Packaging Materials				✓				
	Lectures for Staff on Waste Reduction		✓						
Pollution Prevention Measures	Water Treatment Plant		✓						
	Arrangements for Exhaust of Generator				✓				
	Responsibly Disposing Waste				✓	✓			

(Source: Skype-Based Interviews, June-July 2013)

Zaki *(Owner-manager SME1): ...foreign companies mostly require...quality management system...we have quality management certification [including] ISO 14000 [and] ISO 9000.*

Razi *(Owner-manager SME2): ...there is a need for environmental certification in Pakistan [to run a business]...we have ISO 14000.*

Yaqoob *(Owner-manager SME4): ...If we have certifications that raises the goodwill of our company. We have ISO 9001...and CE mark...we have [also] got ISO 14000...customers ask for it.*

5.3.3 Resource Saving Practices

Regarding resource saving practices, the data indicate that all the sample SMEs were much vigilant of the energy crisis the country was facing. Also, concerns about rising electricity prices and their impact on costs were described, especially with reference to the use of generators. As a consequence, the SMEs were adopting energy efficient methods of production, using energy saving lights and also trying to use generators at bare minimum level to control cost of production. While the environmentally engaging SMEs were taking different initiatives to save resources, the owner-managers of environmentally non-engaging SMEs described that they were only using energy saving lights to control electricity expenses (Table 5.2).

Yaqoob *(Owner-manager SME4): Already the electricity bills are very high. In addition to that the cost of running the generator touches the same limit. So we try to make use of electricity as minimum as possible and run generator where it is inevitably needed. We have mostly used energy savers here....when it is off-time then only those items are switched on which are needed and rest are switched off.*

***Razi** (Owner-manager SME2): ...we are using energy saving lights. In my office, I am using LEDs.*

***Durraiz** (Owner-manager SME6)...we are trying to reduce use of electricity consumption by using energy savers...but the use of generators off-sets all our efforts...*

In some of the environmentally engaging SMEs, employees were trained to reduce the consumption of energy.

***Fahad** (Owner-manager SME3): ...to use minimum electricity,...I generally tell my labour...to make all the measurements first and then start packaging process...so that [measurement] machine runs for a limited time...[and] when packing starts machine is turned off.*

Resources were also saved by using minimum possible packaging materials. Some interviewees described that they had to comply with the packing instructions of their customers. However, they were much more careful with the printing of packaging materials because a minor mistake would leave the entire printed material useless.

***Ali** (Senior manager SME5): ...we ourselves are cautious...we do not use unnecessary [packaging] material. One reason is that if unnecessary and extra material is used, though [we] will face environmental issues, but that shall also raise our costs.*

***Yaqoob** (Owner-manager SME4): We have to do at least what the customers ask for...the main reason of waste is...if something wrong is printed, mistakenly. So, we tell the press that we need 100% perfect thing otherwise we shall not pay for that...*

5.3.4 Pollution Prevention Measures

As is already discussed in section 5.1, the environmental issues attached with the sample SMEs include water, air and noise pollution. The environmentally engaging SMEs were

adopting different practices to reduce their contribution to pollution. For the tanneries, the challenges were double because they had to deal with almost all the types of pollution. Whereas the leather garments manufacturing SMEs often had to deal with noise and air pollution. For example, a tannery owner described how they were aspired to reduce the water pollution.

> ***Razi*** *(Owner-manager SME2): We have worked on it [water treatment plant] and hopefully in a month or so...we can use water treatment plant in our tannery.*

To reduce the level of air and noise pollution, the owner-manager of a leather garments manufacturing unit explained that a separate room- at a reasonable distance- was built to reduce noise pollution.

> ***Yaqoob*** *(Owner-manager SME4): We have to make arrangements for its [generator's] exhaust. We have purposefully built a separate room for the generator to bifurcate its system fully. It is a bit far from the main hall so that minimum noise comes into the main halls...*

Another measure for pollution prevention was described as responsible disposal of wastes. However, the primary motive behind it was expressed to earn additional profits and not environmental considerations.

> ***Ali*** *(Senior manager SME5): ...the waste that comes off the leather or which comes off the skin...all is almost sold even before cutting...some people in Pakistan are making glue...they take this waste...[it] is not drained rather it is sold.*
>
> Ali also described that waste was disposed responsibly *to reduce pollution within the factory and second to keep the drain clear because if it goes into the drain that shall be blocked. So, it is done to avoid the blockage of the drain...It*

has nothing to do with environmental considerations. Primary objective is to earn some money...

Arguably, the findings of section 5.2 are more indicative of cost controlling and profitability raising measures rather than practicing pro-environmental behaviour. At the same time, the pollution prevention and resource saving measures may not be regarded as the exhaustive list of environmental practices of SMEs of leather industry. Somewhat different practices may be adopted by other SMEs. Consequently, future research can explore additional measures of environmental protection taken by the SMEs of leather industry.

5.4 Perceived Motivations for Environmental Engagement

While the environmental practices of sample SMEs are described in section 5.2, this section explores the motivations behind the adoption of those practices. This section also describes why some sample SMEs remained environmentally disengaged.

Table 5.3 shows that different external and internal motivations were informing the environmental practices of environmentally engaging SMEs. Considerably, external motivations dominated the internal motivations. In particular, the pressure from customers was described to be the leading motivation for environmental engagement. This finding contrasts with the results of some of the earlier studies focused at developed economies (e.g. Brammer et al., 2012), which identify customer pressure a lower level of motivation to adopt environmental practices.

***Razi** (Owner-manager SME2): ...different bans [are] imposed by the European countries...now they are implementing REACH test. They [EU] will buy [leather] from Pakistan or from any other country only if REACH test is measured.*

Table 5.3

Perceived Motivations for Environmental Engagement

	Themes	SME1	SME2	SME3	SME4	SME5
External Motivations	Customer Pressure	✓	✓	✓	✓	✓
	Government Pressure		✓	✓		
	Government Support	✓		✓		
	Brand Targeting					✓
Internal Motivations	Goodwill of the Firm				✓	
	Voluntary Initiative	✓				

(Source: Skype-Based Interviews, June–July 2013)

In this research, in contrast to the literature on the developed economies, compliance with regulations was not perceived to be the leading motivation for adopting environmental practices (Revell et al., 2010; Masurel, 2007; Williamson et al., 2006). Rather, pressure from government was regarded as secondary level motivation. However, this finding did not differ from the literature. For example, Williamson et al. (2006) have also argued that 'a higher level of environmental activity is driven by regulation' (p.324). Considerably, in this research pressure from government and support from government were described to go hand in hand.

> ***Fahad*** *(Owner-manager SME3): ...government also exerts pressure. Our department of environment, their representatives keep visiting us...but as such that too is not a big pressure...But yes, from the export point of view, all tanneries want to deal with this issue because they think if exports face this pressure then they shall have to take all the measures.*

> ***Zaki*** *(Owner-manager SME1): ...[water treatment plant] shall be installed by the government. Government shall not only install the plant but has also provided land on very concessional rates and even more than that factories are*

paying the price of land in instalments so that their business is not disturbed. I mean government has given quite a generous concession only for the reason that they [entrepreneurs] can be motivated because people shall be shifting their premises...

Brand targeting was also regarded a motivation for adopting environmental practices. However, aspiration to work with leading brands was found to be informed by economic objectives rather than environmental consciousness. Supply chain pressure could also be traced in this motivation (see the following excerpt), although was not expressed explicitly.

***Ali** (Senior manager SME5): They [entrepreneurs] are doing that for brand and not for Pakistan. They are not working for the government. They are not working for the life of their people. They are just working to get orders and work with a brand...[they are] working just to get an order from the brand. Just to file to a brand. Just to show neat and clean environment to the brand only.*

On the other hand, internally, goodwill of firm (Naffziger et al., 2003; Thorpe and Prakash-Mani, 2003) and voluntary initiative to address environmental problems were described as motivations for environmental engagement. It suggests that environmental practices were adopted for better reputation, by portraying the firm as socially and environmentally responsible unit.

***Yaqoob** (Owner-manager SME4): If we have [environmental] certifications that raise the goodwill of our company...*

***Zaki** (Owner-manager SME1): ...people who belong to this industry voluntarily consider this [pollution] an issue and want to solve it...we are facing its side effects...It is not the customer who is disturbed; it is us who are disturbed.*

While the above discussion describes motivations for environmental engagement, the following would explain the reasons expressed by some owner-managers for not engaging environmentally. Consistently, the owner-managers of all environmentally non-engaging SMEs described that they were not facing any pressure from their customers so they were not adopting environmental practices (Table 5.4). These owner-managers described that they were working with small size customers and not with the leading brands in the market, which could exert pressure to become environmentally responsible.

Table 5.4

Perceived Reasons for Environmental Disengagement

SMEs	Reasons for Environmental Disengagement
SME6	Absence of pressure from customers Environmental Certification is an extra burden Working with non-branded small size customers
SME7	Absence of pressure from customers
SME8	Absence of pressure from customers

(Source: Skype-Based Interviews, June-July 2013)

Getting environmentally certified was also regarded as an extra expense. For these SMEs, registration with the chamber of commerce was sufficient to satisfy the customers. The owner-managers of these SMEs described that customers would be interested to only know if the firm they were going to deal with was registered and that if it was safe to do business with that.

> ***Durraiz*** *(Owner-manager SME6): ...major customers like Nike, Adidas etc. who deal with large size units, they might be asking for...[environmental] certifications. We deal with small customers who do not ask for environmentally relevant certifications.*

Durraiz *(Owner-manager SME6): ...it [environmental certification] is an extra burden. It just adds to our costs. It is possible for large size firms to engage with such kind of activities....*

Asjal *(Owner-manager SME7): ...they [customers] do not exert any pressure about certificates. We have got certificate from Chamber...what the customer might do is to check with chamber if our company exists and that it is not a fake company...As you have got information about us from the chamber.*

In addition to the reasons described above for environmental disengagement, the owner-managers of these SMEs were also found to be defensive in their responses and therefore distancing themselves from the problem. From there responses, it could also be seen that they were not considering taking measures for environment protection because others were not doing so. Despite explaining the purpose of interview, they tried to avoid discussion on environmental issues. They seemed to be escaping from the responsibility of protecting the environment. For example, the following discussion illustrates how the owner-manager of an SME tried to distance himself from the issue when he was asked to describe the environmental challenges his firm was facing in the export markets.

Researcher: *Would you please tell me what kind of pressures you mainly face from American customers regarding environment?*

Asjal *(Owner-manager SME7): We actually have our website. If you want to have a look I can give you our address. So customers actually have a look on our website and then place order for the product that they need. All the details about nature, number of products and the price are agreed and then order is confirmed.*

Asjal *(Owner-manager SME7): What issue should I tell you? It is going like this here right from the beginning. Here are a number of tanneries. All are*

working without certificates. Hardly few would have certificates about chemicals. Mostly are working like this (without certificates).

***Durraiz** (Owner-manager SME6): Neither as such I have any experience of this [environmental certification] nor it is ever needed...what I know is that, rest Allah Almighty knows better, might be any firm has installed water treatment plant. But according to my observation no firm has installed water treatment plant.*

Some of these owner-managers also asserted that environmental protection did not concern them. For them, most important thing was to ensure that their businesses run. They also distanced themselves from environmental issues by expressing that they did not have knowledge about what was done by the government for protecting the environment.

***Asjal** (Owner-manager SME7): I cannot say anything about this. I do not have information about this that what the government is doing. Locally, it is that we have our factory and do not have time to think about others. You are talking about academic things; here people do not have time about these things. Here is only one thing. Are workers present in the factory? Ok, assign them their tasks.*

The discussion in section 5.3 reveals that while some SMEs were not engaging environmentally, the others which were engaging even those were not doing that primarily to protect the environment. Although SMEs did not explicitly express that their prime motive for environmental engagement was profitability, indirectly most of the motivations (e.g. customer pressure, brand targeting and raising the goodwill of the firm) indicated that the business objective dominated the sustainability/environmental objective.

5.5 Human Capital and the Environmental Engagement of SMEs

Having identified different motivations for environmental engagement in section 5.3, this section discusses if and how human capital informs the environmental practices of the sample SMEs. For doing this, information gathered about general human capital (Dakhli and Clercq, 2004; Gimeno et al., 1997) and specific human capital (Dakhli and Clercq, 2004; Gimeno et al., 1997) was analysed. Regarding general human capital, the data about academic qualification of owner-managers and their previous experience of doing business were analysed. Within specific human capital, information about leather related qualification of owner-managers, their environment-specific qualification and previous engagement with the leather industry was explored. Due to the mode of access to interviewees (Skype based interviews), it was hard to access employees for data gathering. Therefore, employees were not included in this research directly. Rather, some information about employee related human capital was gathered from the interviewees, most of whom were owner-managers.

Table 5.5 shows that most of the owner-managers were educated. While some entrepreneurs had attained master level degrees, the others had completed under-graduate studies. At the same time, few SMEs were also managed by uneducated entrepreneurs. Considerably, in this study all the environmentally engaging SMEs were managed by educated entrepreneurs. However, most of the environmentally non-engaging SMEs were run by uneducated owner-managers. Regarding previous experience of doing business, only one entrepreneur described that before joining the leather industry he was doing some other business (was running a textile unit).

Table 5.5a represents data on specific human capital of owner-managers, none of whom was identified to have got formal education either of leather or of environment. For most of the entrepreneurs, the main source of gaining specific knowledge and skills was described to be informal learning. Crucially, none of the owner-managers of environmentally non-

engaging SMEs was identified to be developing environment specific human capital even from informal sources of learning. Regarding previous engagement with the industry, three owner-managers described to have been engaged with the industry. While one of these had been working in a tannery, the other two were employed by leather garment manufacturing units.

Overall, tables 5.5 and 5.5a show that the owner-managers had accumulated general human capital mostly through formal sources, whereas specific human capital was accumulated through informal sources. The main sources of informal learning were described to be the seminars and workshops arranged by the local Chamber of Commerce, environment-specific educational interventions by the Government of Pakistan (though largely absent now), discussion with experienced entrepreneurs, learning through observing the shop floor activities and discussion with employees. Another source of informal learning was described to be self-reading - through books and access to internet based information.

> ***Fahad*** *(Owner-manager SME3): ...we need to know more than what the labour knows...we study from a book or use internet or learn from more experienced people who are already in the field...we have to study to get the work done from them.*

In this research, the absence of requirement of leather related qualification for starting a leather business was identified as an important reason for not getting industry specific and environment specific qualification. The interviewees described if entrepreneurs did not have experience, knowledge and skills, such a vacuum of human capital could be filled by hiring qualified employees, who then look after the affairs of business for the owner-managers. Therefore lack of managerial, technical and environment specific capabilities may be circumvented by engaging competent staff. Contrary to some earlier studies (e.g. Schaper and Raar, 2001), inability to engage competent staff to pursue environmental opportunities may not be regarded a major hurdle for some of the sample SMEs.

Table 5.5

General Human Capital Embedded in Owner-Managers

	SMEs	Academic Qualification	Previous Experience of Doing Business
Environmentally Engaging SMEs	SME 1	Bachelors of Arts	No
	SME 2	Masters	Yes (Owned a textile unit)
	SME 3	Masters (MIS)	No
	SME 4	Bachelor of Commerce	No
	SME 5	Post-Graduation	No
Environmentally Non-Engaging SMEs	SME6	Bachelors of Arts	No
	SME7	No Education	No
	SME8	No Education	No

(Source: Skype-Based Interviews, June–July 2013)

Table 5.5a

Specific Human Capital Embedded in Owner-Managers

	SMEs	Leather Related Qualification		Environment-Specific Qualification		Previous Experience from Leather Sector
		Formal	Informal	Formal	Informal	
Environmentally Engaging SMEs	SME 1	No	Yes	No	Yes	No
	SME 2	No	Yes	No	Yes	No
	SME 3	No	Yes	No	Yes	No
	SME 4	No	Yes	No	Yes	Yes (as an employee in a tannery)
	SME 5	No	Yes	No	Yes	No
Environmentally Non-Engaging SMEs	SME6	No	Yes	No	No	No
	SME7	No	No	No	No	Yes (as an employee in a leather garment firm)
	SME8	No	Yes	No	No	Yes (as an employee in a leather garment firm)

(Source: Skype-Based Interviews, June–July 2013)

Zaki *(Owner-manager SME1): Very few [entrepreneurs] get it [industry related qualification]. Mostly do not....if someone wants to start a business here it is not compulsory for him to first have diploma and then start a business. Now in our city...our top business community is not very well educated but the workers who are employed and are working they are all qualified. They [workers] mostly deal all the business affairs.*

Razi *(Owner-manager SME2): I did not go for any kind of qualification related with leather industry. I hire a manager and a general manager over there. They are qualified people and do each and everything for me.*

Despite the engagement of competent staff, it was described that the decision to adopt environmental practices would largely come from the owner-managers. For some SMEs, where owner-managers lacked technical and environmental knowledge, the availability of industry-experienced and environmentally qualified staff would not necessitate environmental engagement. Although owner-managers, through their employees, might gain access to information about environmental issues but lack of willingness to invest in environmental measures might hinder the adoption of environmental practices. For such SMEs, lack of eco-literacy (Tilley, 1999) and access to environmental information and awareness (Gadenne et al., 2008; Schaper, 2002) might not serve as barrier to environmental engagement, but the unwillingness of owner-managers would do.

Fahad *(Owner-manager SME3): ...the 'Seth' [local term used for an entrepreneur] who is sitting, he is not that technical...mostly the 'Seths' of our industry are not technical. Because they are not technical, they are not ready to accept what others say. So when they are not ready to listen to others, then it is running as it is running since years.*

Razi *(Owner-manager SME2): Look, everyone has knowledge but when it comes to costing everyone closes eyes.*

Ali (Senior manager SME5): Awareness is there...willingness is absent...Who is willing to do it and its cost, the annual cost, who wants to bear it....

While some owner-managers were not willing to invest in environmental measures, the others had identified economic opportunities in waste reduction and pollution prevention measures. Generally, such owner-managers were better qualified having better environmental knowledge and awareness. This finding contrasts with literature, which regards owner-managers as 'ill-informed' about the advantages of adopting environmental practices (e.g. Brammer et al., 2012). In an SME, owned by an educated entrepreneur and having competent managers, employees were regularly given lecture to reduce waste to control pollution and economic losses.

***Razi** (Owner-manager SME2): Look if our trimming losses turn out to be large all the profit shall be drained. We give them [employees] a lecture of about 30 minutes every day to try to minimize trimming so that not much waste is generated and gathered because waste causes pollution. So, we try to minimize it as much as possible. So, we make them listen to us every day. If we do not do this then they will significantly increase the volume of wastes.*

Given the opinions of interviewees, attainment of formal education and/or informal learning does not necessarily seem to influence the environmental engagement of the sample SMEs. Despite being educated, while some entrepreneurs were adopting environmental practices the others were still passive in adopting these. Crucially, the environmental practices of the SMEs of leather industry in Pakistan do not seem to be mainly influenced by the availability of environment-specific human capital but by the willingness of owner-managers to invest in environmental measures.

The above discussion also reveals that it is hard to submit an exact influence of human capital on the adoption of environmental practices of sample SMEs. However, access to larger data set in a substantial study may help to explore and describe a better picture of

human capital as an enabler of environmental engagement among SMEs. Yet, these findings are indicative that human capital does have a role to play in environmental engagement of SMEs. Whether how influential it is, is a question the future research should focus on.

5.6 Conclusions

Overall, this chapter reveals that the major environmental issue of the SMEs in leather industry is water pollution, which has considerable implications for individuals' health and also for preserving the natural resources. Although different measures of environmental protection are identified, these initiatives are mainly driven by pressure from customers and economic rationale instead of sustainability agenda. While it is identified that human capital does influence environmental practices of the sample SMEs, its exact impact could not be explored. Consequently, future research may strive to explore the exact influence of human capital on environmental engagement of SMEs in addition to the identification of some other enablers that might inform the adoption of environmental practices of SMEs in the leather industry.

Chapter 6: Findings and Conclusions

6.1 Introduction

This chapter summarises the findings of this research. Besides, the contribution made to literature is highlighted. Finally, the limitations of the study are acknowledged. Alongside, the implications of this research are also elaborated.

6.2 Summary of Findings and Contribution to Literature

Motivated by the gap in literature that environmental practices of SMEs are least researched in the context of developing economies and that little is known about the factors that might enable the environmental engagement of SMEs this research aimed to explore the motivational and enabling factors of environmental practices of SMEs in the leather industry in Pakistan. By achieving its aims, this research claims to contribute to literature by describing the environmental practices of SMEs in a developing economy i.e. Pakistan. At the same time, this research also responds to the call for research to identify the firm level processes, resources and capabilities that might enable the environmental engagement of SMEs (Hofmann et al., 2012) by explaining the influence of human capital (as an enabler) on the environmental practices of SMEs in the leather industry.

The thematic analysis of the data has revealed that the major environment issue for the sample SMEs is water pollution, which is causing different diseases, reducing the productivity of land and also causing death of marine life. Relatively, the minor level environmental issues include air and noise pollution that cause mental stress and depression.

Encouragingly, most of the sampled SMEs seem to be taking different initiatives to reduce their environmental impacts. These measures include the use of environment friendly inputs, getting environmentally certified, adoption of resource saving practices and pollution prevention measures. Although, most of these measures are consistent with what

the recent literature on developed economies has identified (e.g. Williams and Schaefer, 2012; Brammer et al., 2012; Hofmann et al., 2012), yet some country and industry-specific initiatives do add to the list of environmental practices of SMEs - for example, the installation of water treatment plant and arrangements for exhaust of generators.

Contrary to the prior research, which regards compliance with regulations as the leading motivation for SMEs to behave pro-environmentally in developed economies (e.g. Revell et al., 2010; Williamson et al., 2006) the evidence in this research suggests that the presence of and pressure from environment conscious customers is perceived as the primary motivation for environmental engagement in Pakistan. To some degree, the variation in research findings can be attributed to the contextual factors which suggest that the implementation of legislation in Pakistan is largely weak due to lack of interest of the government in environmental issues and recruitment of environmentally incompetent staff to inspect SMEs regarding their environmental commitments. It shows that the SMEs in leather industry in Pakistan behave environmentally differently relative to the developed economies like UK, Australia, USA and EU countries, where governments are more sensitive to environment and compliance with environmental regulations is strictly monitored.

On the other hand, this study has found that environmentally non-engaging SMEs attribute their environmental disengagement to absence of pressure from customers. It is because these SMEs work with small size customers, who are less sensitive to environmental issues.

Drawing on the human capital literature (e.g. Davidsson and Honig, 2003; Gimeno et al., 1997; Coleman, 1988; Becker, 1964), this research has found that amongst the sample SMEs general human capital is accumulated through formal sources whereas the development of specific human capital takes place through informal sources. Where owner-managers lack capabilities to run their businesses effectively, they hire staff to complement their efforts. Coupled with higher educational attainment, some owner-managers are found

well aware of the challenges and opportunities for adopting environmental practices. Therefore their SMEs get environmentally engaged. Some others despite being academically qualified have lower level of environmental awareness, which also hinders the environmental engagement of their SMEs. This later finding is consistent with the findings of Schaper (2002) and Gadenne et al., (2009), who have argued that formal educational attainment of owner-managers is not a significant predictor of environmental practices of SMEs. Thus, some SMEs do not adopt environmental practices due to lack of 'eco-literacy' (Tilley, 1999) on the part of their owner-mangers.

Ultimately, the decision to adopt environmental practices remains the discretion of owner-managers. Some SMEs despite having competent staff to inform the owner-managers about environmental issues have been found to remain slow in their environmental engagement. This finding contrasts with the notion of Human Capital Theory that 'entrepreneurs with more (or higher quality) human capital "inputs" should report superior "outputs" (Diochon et al., 2008, p.153). According to this research, at times, owner-managers despite having access to environmentally relevant knowledge and skills [inputs] do not adopt environmental practices [output]. In such situations, disengagement with environmental commitments is attributed to lack of willingness of owner-managers to invest in environmental initiatives. It may also implicate that generally the owner-managers in the leather industry are more likely to invest in environmental initiatives only if economic returns (Battisti and Perry, 2010) are attached to such investments, whereas sustainability agenda (Revell and Blackburn, 2007) is not followed as a responsibility to save the environment.

Against the background of the enabling features of human capital, the findings of this study can be considered important for policy interventions. Government of Pakistan can launch environmental awareness programmes not only to educate entrepreneurs and employees, but also to inspire them to pursue environmental opportunities. For this, information desks

can be established in local chambers of commerce to inform owner-managers about emerging environmentally relevant market opportunities. In particular, the government can make a portal to provide a platform for the entrepreneurs and the eco-conscious buyers to contact each other.

Overall, this research has explored that the environmental engagement of SMEs in the leather industry in Pakistan is in its infancy. The measures taken to adopt environmental practices are largely informed by external level motivations, mainly the pressure from customers. However, this may not be because of the resource scarcity that SMEs are not internally motivated for environmental improvement. Rather the weak implementation of legislation, lesser support from government, unplanned spread of firms, lack of willingness and awareness amongst the owner-managers to invest in environmental initiatives and absence of realisation of positive long term outcomes of being environmentally responsible are considerable barriers to the adoption of environmental practices for SMEs in the leather industry. In such a situation, as is also argued by Revell and Rutherfoord (2003), significant support should come from the government to encourage SMEs to adopt environmental practices say, for example, by giving fiscal incentives, introducing environmental educational interventions and creating information banks to share environmentally relevant market opportunities.

6.3 Limitations and Implications of this Research

While this research has provided new insights about the environmental practices of SMEs from the perspective of a developing economy, Pakistan, it admittedly has a number of limitations and implications. The focus of this research on two districts (Sialkot and Sheikhupura), implicates a limitation that the findings are context specific and therefore are not generalizable across the industry as well as sectors. How SMEs established in other leather clusters (for example, Kasur, Lahore and Karachi) may respond to the research issues can bring new insights about the research topic. Most of the sampled SMEs are

dealing with foreign buyers, how the perceptions of SMEs which just operate in the local market may vary from these international sellers is not known. Therefore, this is another possible research area where researchers can compare and contrast the environmental practices of SMEs which are operating in local and foreign markets.

This research only considers the influence of human capital on environmental engagement of SMEs, as an enabler. Future research can explore the impact of other forms of entrepreneurial capital (social capital, symbolic capital and economic capital) on environmental practices of SMEs. Additionally, this research calls for exploring the sources that inform the perceptions of owner-managers about environmental issues, practices and motivations.

The finding that inter-firm linkages are established to gain access to eco-friendly inputs needs to be explored further to understand the dynamics of the larger picture of inter-firm collaborations. It would also be valuable to explore the role of interventions (local and international) in developing the environmental competency of SMEs to adopt environmental practices.

To conclude, this research calls for more studies to explore the influence of different enabling factors on environmental engagement of SMEs to better understand the preconditions for successful environmental engagement of SMEs.

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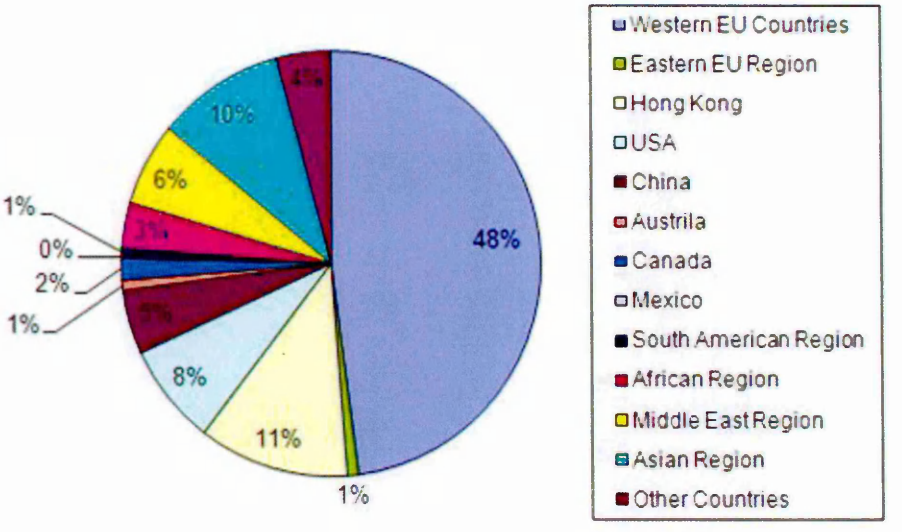
Country-Wise Concentration of Leather Exports from Pakistan



Source: http://www.pakistantanners.org/industrial_statistics.html; accessed on: 26th November 2012

Appendix-1B

Profile of Leather Industry of Pakistan

Pakistan is located in South Asian region. The country is spread over an area of 796,095 sq. km, which makes it the 36th largest country in the world. With a population size of about 180 million people it is the sixth most populous country in the world. According to the Economic Survey of Pakistan (2011-2012), the per-capita income of the country stands at $ 1,372. Among many other factors, such a lower level of per-capita income is an indication that the country falls in the category of developing economies.

Pakistan is an agrarian economy. However, the country has gone through transformation over the years. Not only has the agriculture sector grown, the industrial and services sectors have also got considerable contribution to economic growth of the country. The roots of industrial development in the country can be traced back to 1950s. However, the industry is significantly based on the agriculture sector. The two leading export earning industries, textile and leather, are dependent on the amount and quality of inputs coming from the agriculture sector.

The history of leather industry of Pakistan can be traced back to 1947, when the country emerged on the map of the world as an independent state. At the time of independence there were few tanneries. However, in 1950s some well-equipped tanneries were established in Karachi and Lahore regions. Later on, in 1960s and 1970s, the number of leather firms started to increase with the emergence of more leather units in Sialkot, Kasur, Multan, Gujranwalla, Sahiwal and later on in Sheikhupura districts. Following the growth of leather firms in the Punjab province some more leather units could be seen in NWFP province as well.

According to a recent study[17], conducted by the World Bank for the Ministry of Industries and Production Pakistan, more than 2300 leather units (formal and informal) are operating in the country providing employment to about 500,000 people. Most of the firms operating in the industry fall in the category of SMEs, with the exception of a few large size units established in Lahore and Karachi regions. A glance on the spread of leather firms in Pakistan shows that the industry is heavily concentrated in the two most industrial provinces of the country i.e. Punjab (Main cities include; Sialkot, Sheikhupura, Kasur, Gujranwala, Lahore, Multan, Faisalabad and Sahiwal) and Sindh (Main cities include; Karachi and Hyderabad) [Figure-1A].

According to Pakistan Tanners Association (PTA), which is an official industrial organization representing the leather industry of the country, there are about 216 firms that are its members. It is important to mention here that the leather firms which are operating in the informal sector are not members of this association. Membership wise, this association divides the country in two zones i.e. North Zone and South Zone. In the North Zone, which represents Punjab, NWFP and Jammu and Kashmir, there are about 102 member units. On the other hand, 114 members come from the South zone that covers Sindh and Balochistan provinces [Figure-1B].

As is rationalised in chapter 1 of this dissertation, the focus of this study is Punjab province and in that two districts i.e. Sialkot and Sheikhupura [Figure-1C].

[17] Implementable Recommendations for Cleaner Production Programme in Pakistan (2011).

Figure-1A

Province Wise Concentration of Leather Industry in Pakistan

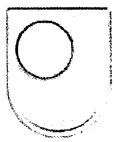
Figure-1B

Province-Wise Concentration of Leather Firms according to the Membership of Pakistan Tanners Association (PTA)

Figure-1C

Geographical Position of Sample SMEs in the Punjab Province, Pakistan

Ethical Approval from the HREC of the Open University



The Open University

From	Dr Duncan Banks Chair, The Open University Human Research Ethics Committee
Email	duncan.banks@open.ac.uk
Extension	59198
To	Aqueel Imtiaz Wahga, FBL
Subject	*"The Role of Entrepreneurial Resources and Capabilities in Environmental Improvement of SMEs: Contemporary Practices and Interventions in the Leather Sector of Pakistan."*
Ref	HREC/2013/1463/Wahga/1
Red form Submitted	23 May 2013
Date	29 May 2013

Memorandum

This memorandum is to confirm that the research protocol for the above-named research project, as submitted for ethics review, **has been given a favourable opinion** by the Open University Human Research Ethics Committee.

You may wish to consider the following recommendations from the HREC reviewers:-

1. The consent form could state that participants agree to take part in the study and that they understand that they can withdraw.

2. It is good practice to have an independent person with whom participants can contact if there are any queries or concerns about the study.

Please make sure that any question(s) relating to your application and approval are sent to Research-REC-Review@open.ac.uk quoting the HREC reference number above. We will endeavour to respond as quickly as possible so that your research is not delayed in any way.

At the conclusion of your project, by the date that you stated in your application, the Committee would like to receive a summary report on the progress of this project, any ethical issues that have arisen and how they have been dealt with.

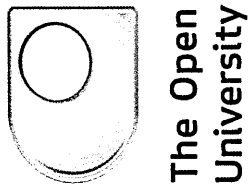
Regards,

Duncan Banks

Dr Duncan Banks
Chair OU HREC

Appendix-3B

Project Information Sheet and Consent Request Document



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Consent to Participate in Research Study

Dear_____,

I am carrying out a study to explore the environmental dynamics of small and medium enterprises (SMEs) in emerging economies. My project aims to explore how the leather SMEs in Pakistan accumulate, develop and use their resources and capabilities to exploit environmentally relevant market opportunities. In doing so, I intend to talk to those entrepreneurs who are taking measures to reduce the environmental impact of their businesses.

The discussion shall be telephonic / skype based and shall be audio / video recorded, which later on shall be transcribed for analysis. It is assured that your and your business's identity shall be kept anonymous. Extracts from discussion shall be used to inform the analysis chapter of dissertation. Moreover, information might be disseminated through publishing academic articles and presentations (seminars / conferences). You are very welcome to read the analysis following our discussion that shall be reported in my dissertation. It is also assured that the discussion information shall be kept in password protected devices so as to ensure that the information is not accessed by unauthorised persons.

Participation is voluntary and during discussion, if at any point, you like to stop discussion, do not want to be recorded or do not wish to answer a question, you may do so. It is also assured that no risks are likely to be attached to the project. Yet, the project is under strict obligation to protect you from any type of psychological distress or physical risks.

Your valuable contribution to the project is highly appreciated.

Best Regards,

Aqueel Wahga
Cell: + 44 (0) 7720 204821
Email: aqueel.wahga@open.ac.uk

_____

I _____ Of _____

Agree to participate in the study mentioned above and also understand that I can withdraw from the study if I want to.

Signature: **Dated:**

Note: If you like to know more about the research project, you are welcome to talk to me and / or my supervisors.

Dr. Richard Blundel (richard.blundel@open.ac.uk) and Dr. Anja Schaefer (anja.schaefer@open.ac.uk)

Appendix-4A

SME-Specific Details of the Sample

Table 4A-1

Size of the Business

SMEs	Firm Size
SME1	Medium
SME2	Medium
SME3	Small
SME4	Medium
SME5	Medium
SME6	Small
SME7	Small
SME8	Small

(Source: Skype-Based Interviews, June – July 2013)

Table 4A-2

Geographical Spread of the Sample SMEs

SMEs	City of Establishment	District of Establishment	Province
SME1	Sialkot	Sialkot	Punjab
SME2	Sheikhupura	Sheikhupura	Punjab
SME3	Muridkey	Sheikhupura	Punjab
SME4	Sialkot	Sialkot	Punjab
SME5	Muridkey	Sheikhupura	Punjab
SME6	Sialkot	Sialkot	Punjab
SME7	Sialkot	Sialkot	Punjab
SME8	Sialkot	Sialkot	Punjab

(Source: Skype-Based Interviews, June – July 2013)

Table 4A-3

Core Business Activity of the Sample SMEs

SMEs	Nature of Business
SME1	Leather Garments
SME2	Tannery
SME3	Semi-Manufactured leather
SME4	Leather Garments
SME5	Tannery
SME6	Leather Garments
SME7	Leather Garments
SME8	Tannery, Leather Garments and Gloves

(Source: Skype-Based Interviews, June – July 2013)

Table 4A-4

Ownership of the Sample SMEs

SMEs	Nature of Ownership
SME1	Local
SME2	Local
SME3	Local
SME4	Local
SME5	Local
SME6	Local
SME7	Local
SME8	Local

(Source: Skype-Based Interviews, June – July 2013)

Table 4A-5

Target Markets of the Sample SMEs

SMEs	Target Market
SME1	Local and Foreign
SME2	Local and Foreign
SME3	Foreign
SME4	Local and Foreign
SME5	Local and Foreign
SME6	Local and Foreign
SME7	Foreign
SME8	Local

(Source: Skype-Based Interviews, June – July 2013)

Step-by-Step Strategies Adopted to Gain Access

In the first instance, SMEs dealing in leather garment business were identified using the member's directory of the Sialkot Chamber of Commerce[18]. The main reason for selecting the Sialkot cluster of leather industry was that it is one of the oldest leather clusters in the country and is well known for its exports to countries worldwide including EU, UK and USA. After going through the profile of the SMEs, through their websites, 10 SMEs were selected, to be contacted telephonically, to recruit their owner-managers as interviewees. The rationale for choosing 10 firms was to ensure that if access was denied by some firms or if some firms did not provide substantial information, then others could be used for doing a comprehensive analysis. Another purpose of contacting the leather garment firms was to use them as gatekeepers to access some tanneries from whom these firms were buying semi-manufactured leather for their products. An important reason for doing this was to explore if the linkages were playing any role in adopting environmental practices.

The phone calls were made either from the workplace station, at the Open University Business School D1 wing, or while being away from the campus, preferably from home. Such a strategy was adopted considering the time difference of Pakistan and the UK (Pakistan is 4 hours ahead). Phone calls were made either between 8 am and 10 am or between 3pm and 5 pm (Pakistan Standard Time). These two time slots were chosen, in the light of previous field based research experience in Pakistan considering that generally entrepreneurs prefer to attend calls from unknown numbers either in the first half of the day or in the second half of the day because they are relatively less engaged with their usual business affairs during these times. Initially, telephonic calls were made during second half of the day (3pm to 5 pm). Where calls were not attended, the second attempt was made during first half of the day (8 am to 10 am). Out of the 10 initial calls, 5

[18] http://www.scci.com.pk/search.php

telephonic calls (made in the afternoon) got through in the first attempt. Two of these firms agreed to take part in the study while the rest three denied access. The other 5 firms, where telephone was not attended in the afternoon, the following day they were tried to be accessed during the first half of the day. This time 3 more firms attended the call while 2 calls went unattended. Out of the 3 which attended the call, 1 firm agreed to participate in the study. The third round of gaining access through telephone started with a two days gap and this time telephonic calls were made both during the first half of the day and, where needed, during the second half of the day. This time calls were attended but the 2 firms excused to participate in the study due to their prior business commitments. However, they agreed to spare time after one month, but due to time constraint of the MRes project it was considered better to access them for PhD work. So, these two firms are accessible for PhD project. No more attempts of telephonic contact were made as the time constraint for the study did not permit to do so. In total, through telephonic calls 3 firms were recruited to participate in the study. These 3 firms later on served as gatekeepers as they helped to gain access to 5 more SMEs.

Plan for Skype Based Interviews

Date of Interview	SMEs	Remarks
17-6-2013	SME1	Done as scheduled
18-6-2013	SME2	Rescheduled on 26-6-2013
20-6-2013	SME3	Done as scheduled
21-6-2013	SME5	Rescheduled on 5-7-2013
22-6-2013	SME6	Done as scheduled
23-6-2013	SME7	Done as scheduled
25-6-2013	SME8	Done as scheduled
26-6-2013	SME4	Done as scheduled
26-6-2013	SME2	Done as Rescheduled
5-7-2013	SME5	Done as Rescheduled

Appendix-4D

Interview Schedule for Data Collection

Interview Schedule for Discussion on the Environmental Practices of SMEs in the Leather Industry in Pakistan

1. Would you kindly explain me about your business?
2. Would you like to tell me something about your experiences and qualification?
3. What is your understanding of the environmental issues?
4. Would you please explain me the environmental impacts of your firm?
5. How does your firm try to reduce its environmental impacts?
6. Why does your firm reduce its environmental impacts? I mean what are the motivations behind doing this?
7. Have you got environmental qualification? Or you do it on the basis of your experience?
8. Would you please tell me something about the experiences and qualification of your staff/employees?
9. Do your employees have environmental qualification?
10. If yes, can you give me some examples?
11. What measures does your firm take for developing the skills of staff?
12. Is skill development general or environment related?

Appendix-4E

Two Days Training Course on Thematic Analysis

Course: **Introduction to Qualitative Data Analysis**
Wednesday 10th July and Thursday 11 July 2013

Registration: Reception Area – Department of Sociology
Elizabeth Fry Building (formerly AD Building) – Level 3

Presenters: Sarah Earthy and Judith Sleney
Department of Sociology, University of Surrey

OUTLINE PROGRAMME

Day 1 - Wednesday 10th July

10:00	Registration
10:30	Introductions
10:45	What is qualitative analysis?
11:15	Coffee / tea break
11:30	Thematic approaches to qualitative analysis + Practical Exercise 1 ('Peter' and 'Jennifer')
1:00	Lunch
2:00	Practical Exercise 2 (data from community study)
2:30	Begin Practical Exercise 3 ('Derek' and 'Shirley')
3:00	Tea / coffee break
3:15	Practical Exercise 3 continued
3:50	Groups present some initial findings from Exercise 3 and opportunity to ask questions
4:30	Close

****

Day 2 – Thursday 11th July

10:00	Recap on Day 1
10:30	Analysing focus group data + Practical Exercise 4 (focus group data)
11:30	Coffee / tea break
11:45	Feedback on Exercise 4
12:00	Narrative approaches to analysis + Practical Exercise 5 (Lillian and Jane's stories)
1:00	Lunch
1:45	Presenting qualitative analysis (+ issues of validity, generalisability etc)
2:00	Practical Exercise 6 ('Megan')
3:00	Tea / coffee break
3:15	Group presentations + general feedback
4:00	Close

Appendix-4F

Coding Scheme for Tracing Themes from Primary Data

Descriptive Labels/ Categories	Code- I	Code-II	Remarks for Themes		Research Question
Perceptions on Environmental Problems					
Environmental Issues and Impacts	**EII**				
Water Pollution	EII-W	EII- P	Environmental Issues	Pollution	1
Air Pollution	EII-A				1
Noise Pollution	EII-N				1
Health Problems	EII-H	EII-II	Environmental Impacts	Impact on Individuals	1
Skin Problems	EII-S				1
Productivity of Land	EII-L	EII-INR		Impact on Natural Resources	1
Marine Life Dying	EII-M				1
Use of Fuel for Generators	EII-F				1

Measures Taken for Environmental Engagement					
Environmental Engagement	**EE**				
Environmental Certifications	EE- EC	EE- EC			2
Linkages with Environment Conscious Suppliers of Inputs	EE-LECS	EE-LECS			2
Use of Environment Friendly Chemicals	EE-UEFC	EE-UEFI		Using Environment Friendly Inputs	2
Use of Environment Friendly Inputs	EE- UEFI				2
Water Treatment Plant	EE-WTP	EE-WTP			2
Arrangements for Exhaust of Generator	EE-AEG	EE-AEG			2
Limited Use of Generator to Save Fuel	EE-LUG	EE-RSM-E/F		Resource Saving Measures – Energy/Fuel	2
Using Energy Saving Lights	EE-ESL				2
Energy Saving Methods of Production	EE-ESMP				2
Using minimum Packing Materials	EEP-UMPM			Resource Saving	2

Efficient Method of Packaging	EE-EMP	EE-RSM-P		Measures –	2
Careful Printing of Packaging Materials	EE-PPM			Packaging	2
Lectures for Staff on Waste Reduction	EE-LSWR			Resource Saving	2,4
Environmental Training for Staff	EE- ETS	EE-HCD-Inf		Measures	2,4
Environmental Training of Owner-Manager	EE-ETOM			and Human Capital Development-Informal	2,4
Disposal of Waste, Indirectly saving Environment	EE-WD	EE-WD			2
Motivations of Environmental Engagement					
Environmental Engagement: Motivating Factors	**EE-MOT**				
Environment Conscious Customers	EE-MOT-ECC	EE-MOT-ECC			3
Legislation / Pressure from Government	EE-MOT-L	EE-MOT-L			3
Voluntary Actions	EE-MOT-PV	EE-MOT-PV			3

Image of Firm	EE-MOT-IF	EE-MOT-IF			3
Government Support Schemes	EE-MOT-GSS	EE-MOT-GSS			3
Reasons for Environmental Disengagement					
Environmental Engagement : Barriers	**EE-B**				
Cost Inefficiency	EE-B-C	EE-B-C			2,3
Lack of Resources	EE-B-LR	EE-B-LR			2,3
Less Effective Legislative Control and Implementation	EE-B-LEL	EE-B-LEIL		Less Effective Implementation of Legislation	2,3
Political Interference	EE-B-PI				2,3
Environment Ignorant Govt. Staff	EE-B-EIGS				2,3
Lack of Government Support	EE-B-LGS	EE-B-LGS		Lack of Government Support	2,3
Absence of Tannery Zone	EE-B-ATZ				2,3
Lack of Willingness of Owner-Managers	EE-B-LWOM				2,3,4
Lack of Awareness about Environmental Issues	EE-B-LAEI				2,3,4

Less Customer Pressure	EE-B-LCP				3
Human Capital as an Enabler of Environmental Engagement					
Human Capital	**HC**				
General	HC-G	HC-G		General Human Capital	4
Environment Related Qualification of Owner-Manager	HC-ERQOM	HC-ERQOM		Environment Specific Human Capital	4
Environment Related Qualification of Staff	HC-ERQS	HC-ERQS			4
Environment Relevant Training of Staff	HC-ERTS	HC-ERTS			4
Environment Relevant Training of Owner-Manager	HC-ERTOM	HC-ERTOM			4